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A COMPARATIVE STUDY
OF THE
INTELLIGENCE OF DELINQUENT GIRLS

BY

AUGUSTA F. BRONNER, PH.D.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY
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A. F. B.

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A COMPARATIVE STUDY OF THE INTELLIGENCE OF DELINQUENT GIRLS

PART I

1. THE PROBLEM

The question of the delinquent girl is one that has aroused much interest of late. Varied are the explanations that have been given as to the causes that have led to the beginning of her career. Vice Commissions have attempted to investigate the economic and social conditions that are involved. In several places, notably at the Laboratory for Social Hygiene, Bedford Hills, and in Chicago, under the direction of Dr. William Healy, the mental status is being delved into as well. In the latter instance, the delinquent is being studied from every possible viewpoint—mental and physical, as well as environmental and social. These latter investigations tend to show that the problem is no simple one; there is no one ever-present and only cause, but a number of inter-related factors whose relative importance varies with each individual case.

However, apart from those who are working experimentally and scientifically, we find many social workers and, indeed, many of the general public who have expressed their views on the subject. Very many of these have stated it as their opinion that delinquency is due very largely to the fact that the offenders are not sufficiently intelligent to care for themselves without running into difficulties, in fact that the large majority are sub-normal or feeble minded.

Whether every feeble-minded girl is a potential offender, is easily led, the tool of a stronger-minded, more gifted person, is one question. But it is an entirely different question from the one we have in mind, namely, whether all social and moral offenders are mentally ill or mentally unfit.

Are these offenders so lacking in capacity that they are unable to earn a livelihood in legitimate vocations? Is it because they

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are "industrial ineffectives" that they begin careers of wrong doing? Or is it because their lack of ability means lack of moral stamina as well that they are easily influenced, persuaded readily, to join the ranks of offenders?

How do they compare in general intelligence with their sisters who have never come in conflict with the law, with those who are leading lives where, at least, criminal tendencies, should they exist, are controlled?

Of course, one can not compare them with those offenders so much cleverer, or so much luckier, that they can offend without the offense being detected or known. For it must be remembered that in all studies of delinquents, it is only the *caught* delinquent that is discussed. Who knows aught of the many unknown law-breakers—perhaps equally or more culpable—who are clever enough to mingle with their fellows, unsuspected even of guilt. Because the feeble-minded girl is so much more readily—and therefore so much more often—detected and brought into court, is she the more likely to predominate in institutions where investigations are being carried on.

In this study that same selective factor is operative among the delinquents investigated. They form one of the four groups that are compared. The second group is made up of students in the Freshman and Sophomore classes of Teachers College and Barnard College of Columbia University. The third is composed of girls who are members of evening clubs at settlements and branches of the Y. W. C. A. in the same districts of New York City from which the delinquent girls here studied largely came.

The delinquent and college groups vary widely, of course, in many ways—probably in hereditary and environmental forces. It is conceivable that members of the two groups are equally well endowed intellectually; on the other hand, do certain tests differentiate the two groups, should this not be true?

In the third group, though the environmental factors, at least such as living conditions and educational opportunities, are more nearly the same as in the first group, there is another point to be considered. Those who compose this group are again selected after a fashion. For it is only the brighter, the more ambitious, probably, who join the classes that are available to all, and we have, therefore, subjects for testing who are not

chosen at random from among the residents of these neighborhoods, but a group selected by certain ideals.

In order to compare the delinquents with a group not selected for intellectual attainments, it was desired to use as a fourth group, subjects who are doing work of a character where no intellectual standard obtains. It was believed that this requirement would best be found by using a group of those engaged in domestic service.

The problem, then, that is undertaken in this study, is to determine the intellectual status of a group of delinquent girls as compared with the intellectual status of several other groups that represent varying degrees of education and that are engaged in occupations requiring varied degrees of intelligence and ability.

If the delinquent is less capable than the college girl or even than the girl who, though working daily, yet desires to improve herself by study at night, how does she compare with those who, though pursuing a vocation that demands less skill and training, yet earn a livelihood and are economically independent?

2. THE SUBJECTS

I. The *Group of Delinquents*, hereafter called Group D, was composed of 30 girls who were living temporarily at Waverly House, the Detention Home maintained by the New York Probation Association. The subjects were chosen entirely at random, irrespective of the offense because of which each had come in conflict with the law, except that those who were foreigners whose command of English was such that they would be placed at a disadvantage, were not included. A second consideration that limited the subjects was that of age; all members of the group were between 16 and 22 years old.

The group was composed as shown in Table I.

II. The *College Group*, hereafter called Group C, was made up of students within these same age limits, with two exceptions where subjects were slightly older. Some of these were students of psychology but, with the exception of two, were unfamiliar with the tests, and even these two had performed only one of the actual tests used.

III. The *Group of Subjects found in Evening Classes*, called hereafter Group E, were girls of the same ages who comprised, in one instance, a club devoted to educational pursuits at the University Settlement. They were all Jewish girls, all were working, and none of them had attended high school. The remainder of the group were members of two classes at the Harlem Branch of the Y. W. C. A. They represented, in all, various occupations; some were engaged in clerical work, others were clerks, still others were doing skilled factory work.

IV. Because of the difficulty in obtaining subjects in the fourth group, called hereafter Group S, no attention was paid to the age qualification and a number of the subjects were over 22 years old. None of them had ever engaged in any wage-earning occupation other than that of domestic service. Several originally included in the group were later omitted when it was found they were pursuing studies whereby they hoped to prepare themselves for other occupations later. All of the subjects in

TABLE I
THE COMPOSITION OF GROUP D, OR DELINQUENT GIRLS

Subject	Age	Place of Birth	School Grade Reached	Best Occupation	Highest Wage	Offense
1 17		U. S.	8th.....	Stenographer	\$ 8.00 a wk.	Immorality.
2 21		U. S.	5th.....	Candy packer	5.00 "	Sex, Grand larc'y
3 21		U. S.		Housework..	4.00 "	Sex.
4 22		U. S.	Graduate high school	Actress.....	18.00 "	Sex.
5 18		U. S.	3rd.....	Housework..	5.00 "	Sex.
6 21		Canada....	5th.....			Sex.
7 16		U. S.	8th.....	Factory.....	5.50 "	Sex.
8 16		Canada....	5th.....	Factory.....	10.00 "	Sex.
9 21		U. S.	6th.....	Factory.....	6.00 "	Sex, Runaway.
10 21		Roumania, in U. S. 18 yrs.	6th.....	Dishwasher ..	6.00 "	Kidnapping.
11 17		U. S.	7th.....	Housework..	5.50 "	Sex, Stealing, False accusat'ns
12 16		Austria, U. S. 7 yrs.	3rd.....	Operator....	5.00 "	Sex.
13 16		U. S.	6th.....	None.....		Sex.
14 16		U. S.	8th.....	(Actress.....	3.00 a nt.	Sex.
				Factory....	6.00 a wk.	
15 17		Canada....	2nd yr. high school....	Telephone Operator ..	10.00 "	Sex, Stealing.
16 17		U. S.	4th.....	Factory.....	7.50 "	Sex, Runaway.
17 16		U. S.	5th.....	Housework..	2.50 "	Sex.
18 22		U. S.	5th.....	Factory.....	8.00 "	Stealing, Sex.
19 19		U. S.	7th.....	Salesgirl....	6.00 "	Petty larceny, pickpocket, Sex.
20 20		U. S.	2nd yr. high school....	None.....		Sex.
21 21		England....	1st yr. high school....	Clerical.....	8.00 "	Sex.
22 19		U. S.	1st yr. high school....	Bookkeeper ..	10.00 "	Sex.
23 16		U. S.	8th.....	Salesgirl....	7.00 "	Sex.
24 19		Russia, In U. S. 5 yrs.	6th.....	Waitress....	5.00 "	Sex.
25 19		U. S.	1st yr. normal.....			Shoplifting, Sex.
26 20		U. S.	6th.....	Factory.....	5.00 "	Sex.
27 17		U. S.	7th.....	Factory.....	10.00 "	Incorrigible, Stealing, Sex.
28 18		England....	7th.....	Cashier.....	5.00 "	Incorrigible.
29 18		U. S.	6th.....	Book-binding ..	6.00 "	Sex.
30 21		U. S.	6th.....	Housework..	5.00 "	Sex, Incorrigible.

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this group were obtained in such a way that it was ascertained none had been guilty of any known wrongdoing; in this respect they were comparable to Groups C and E and differed from Group D. They varied in nationality; 2 were Bohemians, 2 Nova Scotians, but the remainder were Irish or American born. All earned \$5.50 or more weekly and all had retained positions for quite a period of time, one having been as long as ten years in one family.

3. THE TESTS EMPLOYED

The first group of five tests comprised the Easy Opposites Test, the Hard Opposites Test, Tests for Memory of Words, and Memory of Passages, and the Ebbinghaus Completion Test. These tests were among those used by Dr. B. R. Simpson in his study of "Correlations of Mental Abilities." Dr. Simpson tested two groups of adults representing, as far as possible, the two extremes of general intelligence as judged by the world. The "Good Group" was made up of 17 professors and advanced students of Columbia University; those in the "Poor Group" were 20 men who had never held any position demanding a high grade of intelligence. Eighteen were men found at the Salvation Army and in a mission on the Bowery.

The five tests selected were all found by Dr. Simpson to differentiate his two groups. He found the overlapping to be as follows:

TABLE II
EXTENT TO WHICH SIMPSON'S "POOR" GROUP OVERLAPPED HIS "GOOD" GROUP

Percentage of "Poor" Surpassing	Ebbing-haus Test	Hard Opposites	Memory of Words	Memory of Passages	Easy Opposites
50% of "Good"	0	0	0	0	0
Lowest 4 of "Good" or 23½ %	0	0	5	10	0
Lowest 2 " " 12 %	5	0	10	15	0
Lowest 1 " " 6 %	5	0	10	40	0

Here we see that in the Easy and Hard Opposites no member of the Poor Group attained as good a record as the poorest member of the Good Group, and in no one of these tests did any subject in the Poor Group reach the median of the Good Group. These tests, then, seemed fair means of determining the intellectual status of the subjects.

Since our main group is one composed of delinquents, it was desired to find, if possible, some means of determining the in-

telligence of the various groups in regard to moral situations. It was clearly recognized that knowledge concerning moral elements is in no wise a guarantee of moral action. Ethical discrimination as found by tests indicates no necessary correlation with behavior. But negative results, and peculiar or confused judgments, might prove a help in understanding the attitude of the delinquent.

For this purpose, two different tests were used. First, the Ethical Discrimination Test of Fernald, reported in the *American Journal of Insanity*, Vol. 68, April, 1912. In this test the subject is asked to rank in the order of their gravity ten different misdeeds. The second is an adaptation of the Completion Test. It consists of a series of very brief stories, or situations, containing blanks that permit of the use of alternatives and in which judgment is to be given in regard to the incident narrated. The "significant" passages are interspersed with a number of "innocent" passages in order that the subject may not realize the purpose of the test and may react more naively.

METHOD OF ADMINISTERING TESTS

In General

All members of Group D were tested individually; an effort was made to give each subject the advantage of quiet, uninterrupted work. All tests were completed by all members of the group at one sitting, the time required averaging about two hours. Before beginning the tests, the good will and interest of each subject was sought and in almost every case the girls seemed interested, anxious to do their best, and coöperated in every way.

Groups C and E were not tested in every case individually; in all cases they wrote their own replies. It was necessary, in order to save time, to test them in small groups of from two to four. In Group C the speed of writing would be much less variable than in Group D. In Group E it was more difficult to obtain subjects and it was often necessary to perform the work on two different evenings, since the subjects came late after a day's work and had not sufficient time at one sitting to complete them. In this way, the element of fatigue, should it have been a factor, was minimized.

Though no individuals in any group knew the object of the tests, other than that their results were to be used for purposes of comparison, yet all were greatly interested. This was shown by the fact that in Group C the subjects volunteered their services and without objection gave the necessary time, while in Group E the subjects returned the second evening to complete the work.

In Group S the conditions were not quite so uniform for the different subjects. The tests, with several exceptions, were given in the same manner as in Group D. The attitude of the subjects was somewhat different; they were more skeptical in regard to attempting them, they were older on the average and possibly less keenly interested. But as they were paid for their services, the majority endeavored to do what was asked of them as well as they could.

Such differences in administration of the tests as circumstances required redounded to the advantage of Groups D and S, especially to the former. Conditions there were best controlled and the tests given as nearly as possible in the same manner.

In Detail

The main effort in giving instructions as to the performance of the tests was directed towards making the point desired perfectly clear. In Group D and in the majority of Group S the subject did no writing, but responded orally, the experimenter writing the replies verbatim. A sufficient number were written for subjects in Groups C and E to make it practically certain that none wrote at quicker speed than the experimenter, so that none of the subjects was handicapped thereby. The speed of writing would have been so variable in Groups D and S that it would have been a large factor in distorting results in those tests where a time record was taken.

In the Easy Opposites Test the subjects were told to give as quickly as possible a word that meant exactly the opposite of the word read. If necessary the word "opposite" was explained and several illustrations were always given. Then the word was read clearly, the reply written by the experimenter and the time record for each group of twenty words recorded.

The Hard Opposites Test was given in the same way except that the subject was urged beforehand to give the best opposite

she could and not to omit any word unless it were altogether unknown.

In giving the Memory of Words Test the subject was told that a list of words would be read once and that, as soon as the last word was read, she was to repeat all the words she could remember.

In the Memory of Passages Test, the passage was read at uniform rate and as distinctly as possible. At the conclusion the subject retold as much as she could, the experimenter writing it down verbatim.

The Ebbinghaus Completion Test was first illustrated by a sample blank, any points not understood being explained. Then the subject looked on while the experimenter read the passage, filling in the blanks as the missing words were given by the subject. Time record was also kept in this test.

The adapted blanks, involving moral judgment, were completed in the same way. In the Ethical Discrimination Test the ten cards bearing each one sentence were shown and read to the subject, the purpose of the test explained and each asked to arrange them in order.

The tests were administered in the same way for Groups C and E as regards instructions, but the writing was done by the subjects themselves.

4. THE SCORING OF THE TESTS

As has been pointed out by a number of experimenters, any method of scoring tests such as those here used must be more or less arbitrary. The method here adopted seemed as fair as any.

In the Easy Opposites Test the responses were scored on a scale of 0— $\frac{1}{2}$ —1; 1 when the word given was an exact opposite, and $\frac{1}{2}$ if half right. The final record was obtained by adding $1/8$ of the time record for each zero and $1/12$ of the time for each credit of $\frac{1}{2}$. The average of the four separate tests was then obtained.

The same method was pursued in the Hard Opposites Test, except that the scale used here was 0—4. What credit should be allowed for each word given was determined by having the list graded by three persons—the experimenter and two assistants in the department of psychology. Where the same word had been given by subjects in Dr. Simpson's study, there were six evaluations that were combined to gain the standard.

After this scoring was completed, the time record was increased by $\frac{1}{4}$ for each word graded as 0; $1/8$ for those graded as 1; $1/15$ for those graded as 2; $1/10$ for those graded as $1\frac{1}{2}$; $1/24$ for those graded $2\frac{1}{2}$. These amounts were not taken arbitrarily but after experimenting to discover what penalizing would best evaluate both factors of time and accuracy.

In the Memory of Words Test the final score was the number of correct words given. The incorrect additions were scored separately.

The replies in the Memory of Passages Test were scored on a scale of 0—25 by three persons, again the experimenter and the assistants. The average of these three scores was then used as the final score.

In the Ebbinghaus Completion Test the blanks were scored first for excellence alone on a scale of 0—10. The scoring was done by three persons as before, the average being again used as the final score for excellence alone. The penalizing for errors

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was then made by adding to the time score according to the following scale:

Record 0.....	Addition	25/10 of the time.
" 1.....	" 22/10	" "
" 2.....	" 19/10	" "
" 3.....	" 16/10	" "
" 4.....	" 13/10	" "
" 5.....	" 10/10	" "
" 6.....	" 8/10	" "
" 7.....	" 6/10	" "
" 8.....	" 4/10	" "
" 9.....	" 2/10	" "
" 10.....	"	" "

The method of scoring used by Fernald in the Ethical Discrimination Test was used, namely, each card was scored according to its placement for each subject on the scale of 1—10, 10 indicating that the act was judged as worst, 1 as least bad.

The adapted Completion Test was scored for general intelligence on a scale of 0—5.

In Table III are given the scores for the various tests in detail, while in Table IV are given the final scores which each subject received.

PART II

1. THE ORIGINAL SCORES

TABLE IIIa. COLLEGE GROUP (C)
ORIGINAL SCORES

EASY OPPOSITES:

		A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
C	1	19½	½	44	48	18½	½	70	85	19	1	50	58	20	..	..	41
"	2	19	1	42	47	18	2	40	50	19½	½	38	41	19	1	45	51
"	3	19½	½	57	62	19	1	61	69	20	..	..	64	20	..	..	47
"	4	19	1	45	53	18½	½	51	64	19	1	48	54	19½	½	46	50
"	5	20	..	42	42	20	..	52	52	20	..	..	40	19½	½	47	51
"	6	19	1	35	41	20	..	41	41	20	..	..	42	20	..	..	46
"	7	18½	½	42	53	19½	½	38	41	19½	..	38	41	18½	½	42	51
"	8	18½	½	45	55	20	..	44	44	20	..	..	42	20	..	..	41
"	9	19	1	47	55	18	2	41	51	15½	½	50	88	19	1	50	58
"	10	19½	½	37	40	20	..	..	40	19½	4½	40	43	20	..	..	42
"	11	20	..	..	43	20	..	..	35	18	½	48	56	19	1	40	47
"	12	19	1	56	65	20	..	..	47	19	2	52	61	20	..	..	60
"	13	19	1	59	69	19	1	62	70	18	1	42	53	16	4	48	74
"	14	19½	½	45	49	20	..	..	35	20	..	..	38	19	1	30	34
"	15	20	..	..	38	20	..	..	39	19½	2	40	43	20	..	..	43
"	16	20	..	..	46	20	..	..	50	19½	½	48	52	20	..	..	48
"	17	18½	½	55	69	19	1	56	63	19	½	45	53	18½	½	63	76
"	18	19	1	55	64	19½	½	45	49	20	..	..	35	19	1	43	48
"	19	19½	½	43	47	20	..	..	47	20	..	..	45	20	..	..	47
"	20	19½	½	44	48	19	1	67	75	19	1	36	42	20	..	..	40
"	21	19	1	43	50	20	..	..	37	19	1	30	34	20	..	..	29
"	22	19	1	44	51	19½	½	40	43	19½	½	50	54	20	..	..	25
"	23	18½	½	37	45	19	1	45	51	20	..	35	35	19½	½	37	40
"	24	20	..	47	47	20	..	..	47	20	..	..	46	20	..	..	46
"	25	19½	½	33	36	20	..	..	40	19½	½	35	38	20	..	..	37
"	26	19	1	40	47	19½	½	40	44	19½	½	41	44	19½	½	42	46
"	27	19½	½	48	52	20	..	..	50	20	..	..	50	20	..	..	62
"	28	19½	½	35	38	20	..	..	40	20	..	..	38	20	..	..	36
"	29	19½	½	41	44	20	..	..	65	19½	½	44	48	19½	½	44	48
"	30	19½	½	45	49	20	..	..	48	18½	1½	43	52	20	..	..	47
"	31	19½	½	41	44	18½	½	44	57	20	..	..	41	20	..	..	44
"	32	19½	½	52	57	18	2	53	66	20	..	..	55	19	1	54	61
"	33	19	1	42	47	20	..	..	46	20	..	..	27	19½	½	46	50
"	34	19	1	37	43	20	..	..	49	19	1	38	44	19½	½	41	44
"	35	20	..	..	46	18	2	48	60	19½	½	48	52	20	..	..	46
"	36	20	..	..	40	20	..	..	20	19½	½	35	38	19½	½	40	43

r = number right.

w = number wrong.

t = time in seconds.

sc = score after penalizing, in terms of seconds.

All fractions are dropped in scores.

½ + = number above.

½ - = number itself.

TABLE IIIb. (GROUP C—continued)

HARD OPPOSITES:				A				B				C				D			
	<i>w</i> and	<i>r</i>	<i>o</i>	<i>t</i>	<i>sc</i>	<i>r</i>	<i>w</i>	<i>t</i>	<i>sc</i>	<i>r</i>	<i>w</i>	<i>t</i>	<i>sc</i>	<i>r</i>	<i>w</i>	<i>t</i>	<i>sc</i>		
C	1	48	1	210	386	36	4	130	361	40 $\frac{1}{2}$	3	175	426	39	3	150	378		
"	2	50	2	96	170	43	3	70	158	39 $\frac{1}{2}$	3	90	205	51	..	118	187		
"	3	53	..	135	196	49	1	124	315	49 $\frac{1}{2}$	1	153	266	45 $\frac{1}{2}$	1	188	375		
"	4	48	2	155	291	46	2	147	296	42	3	130	305	50	..	105	174		
"	5	58	..	180	204	45 $\frac{1}{2}$	4	140	304	40 $\frac{1}{2}$	3	145	352	44	3	205	451		
"	6	56	..	130	158	46	1	145	286	43 $\frac{1}{2}$	2	130	283	45	4	175	384		
"	7	44	4	142	321	35 $\frac{1}{2}$	6	135	396	26	9	108	400	39	5	133	352		
"	8	53 $\frac{1}{2}$	2	77	119	57	..	82	97	48 $\frac{1}{2}$	1	80	145	49	1	85	151		
"	9	43 $\frac{1}{2}$	1	113	239	48 $\frac{1}{2}$	2	98	182	36	5	90	256	41	3	103	246		
"	10	52	1	130	204	55 $\frac{1}{2}$	..	110	144	52	..	87	134	54 $\frac{1}{2}$	..	122	168
"	11	49	1	155	274	34	5	117	343	37 $\frac{1}{2}$	5	112	307	42	4	170	284		
"	12	43	4	110	255	41 $\frac{1}{2}$	2	126	265	42 $\frac{1}{2}$	4	160	379	43	4	120	279		
"	13	51	1	167	273	44 $\frac{1}{2}$	3	135	293	28 $\frac{1}{2}$	3	145	369	44	3	150	331		
"	14	53	2	80	105	49	1	95	170	43 $\frac{1}{2}$	1	88	187	49	..	85	146		
"	15	57	..	97	117	39	4	89	229	43 $\frac{1}{2}$	3	92	206	48	2	110	208		
"	16	51 $\frac{1}{2}$	1	190	287	49 $\frac{1}{2}$	2	128	230	41 $\frac{1}{2}$	4	148	358	44 $\frac{1}{2}$	3	140	214		
"	17	47	2	128	225	49 $\frac{1}{2}$	1	122	211	40	2	120	290	41	3	148	355		
"	18	53	1	103	156	43	2	115	253	37	2	93	242	42	3	100	233		
"	19	55	1	110	152	54	..	113	158	54	..	107	152	53 $\frac{1}{2}$	..	130	185	
"	20	44	1	126	277	47	2	108	213	40 $\frac{1}{2}$	4	135	339	49	..	77	166		
"	21	54 $\frac{1}{2}$	..	123	168	47	1	105	195	47	2	60	118	53	..	72	105	
"	22	55	1	78	108	51	2	109	185	47 $\frac{1}{2}$	3	103	201	50	1	97	165		
"	23	50	1	105	179	51 $\frac{1}{2}$	2	132	221	51	..	98	153	49	1	95	168		
"	24	48 $\frac{1}{2}$	2	224	414	46	2	101	205	31	7	120	333	36	7	100	294		
"	25	45	2	75	155	54	..	72	99	50	..	80	132	50 $\frac{1}{2}$	1	105	156		
"	26	51	2	84	142	47 $\frac{1}{2}$	1	87	169	46	2	130	263	47	1	102	193		
"	27	56 $\frac{1}{2}$	1	115	149	53	..	108	158	55 $\frac{1}{2}$	..	152	197	47 $\frac{1}{2}$	2	170	306	
"	28	52	2	180	294	41	4	125	303	45	1	110	208	46	2	140	284		
"	29	49	1	170	339	46	3	92	192	40 $\frac{1}{2}$	3	170	417	40	3	130	320		
"	30	55	..	85	112	51 $\frac{1}{2}$	..	130	217	39	4	110	286	54 $\frac{1}{2}$	..	145	199
"	31	49	2	97	178	45	2	115	238	49 $\frac{1}{2}$	1	107	187	56	..	70	113		
"	32	44	3	105	152	46	1	108	211	46	2	105	214	45	2	114	238		
"	33	57	1	78	98	53	..	82	126	46 $\frac{1}{2}$	2	82	163	45	2	73	152		
"	34	47	2	128	249	48 $\frac{1}{2}$	1	67	120	31 $\frac{1}{2}$	7	109	354	35	6	100	295		
"	35	42 $\frac{1}{2}$	2	135	234	42	4	90	214	40 $\frac{1}{2}$	3	100	242	44	2	105	226		
"	36	58	..	85	96	52 $\frac{1}{2}$	1	120	156	41 $\frac{1}{2}$	3	110	227	52 $\frac{1}{2}$	..	95	142	

r = score of correct and partially correct.*w and o* = number wrong and omitted.*t* = time score in seconds.*sc* = final score after penalizing, in terms of seconds.

TABLE IIIc. (GROUP C—continued)

MEMORY FOR UNRELATED WORDS:

	A		B		C		D	
	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>
C 1	9	2	7	1	7	1	8	..
" 2	7	1	8	..	8	1	8	..
" 3	10	..	8	1	5	..	8	..
" 4	7	..	5	..	7	..	9	..
" 5	7	..	6	1	8	..	9	..
" 6	13	..	9	..	8	..	10	..
" 7	8	..	7	1	6	1	6	1
" 8	10	..	8	..	10	1	11	1
" 9	9	..	7	1	9	..	8	..
" 10	7	1	9	..	7	..	7	..
" 11	8	1	8	2	8	..	9	..
" 12	9	..	9	..	11	1	11	..
" 13	11	..	9	..	8	..	5	1
" 14	9	..	7	..	5	..	8	..
" 15	8	..	8	..	10	..	9	..
" 16	8	..	8	..	6	..	10	..
" 17	10	..	11	..	9	2	10	..
" 18	12	1	6	2	11	..	10	..
" 19	11	..	12	2	8	..	9	..
" 20	11	..	7	1	8	2	9	..
" 21	11	..	10	..	12	1	12	..
" 22	8	..	6	1	5	1	8	1
" 23	8	..	8	..	9	2	11	..
" 24	8	1	6	..	6	..	7	..
" 25	10	..	8	..	8	..	7	..
" 26	9	..	5	1	9	..	8	..
" 27	7	1	8	1	8	..	8	1
" 28	9	1	11	..	9	..	12	..
" 29	9	..	7	..	8	..	7	..
" 30	11	..	8	..	10	..	8	1
" 31	9	..	7	..	7	2	8	..
" 32	8	..	7	..	8	..	13	..
" 33	6	1	9	..	9	..	6	1
" 34	6	2	6	..	5	2	7	..
" 35	11	..	11	..	7	1	8	1
" 36	9	..	8	..	7	3	9	..

r = number remembered, that are right.*w* = number added, not on list.

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TABLE IIId. (GROUP C—continued)

MEMORY, LOGICAL PASSAGES:

	B	C	A			B	C	B			B	C	C			B	C	D		
			F	Av.	B			F	Av.	B			F	Av.	B		F	Av.		
C	1	11	12	8	10.3	11	13	6	10.	14	14	11	13.	22	19	14	18.3			
"	2	14	16	12	14.	17	20	13	16.6	11	12	7	10.	14	18	12	14.6			
"	3	10	12	10	10.6	10	10	7	9.	6	6	3	5.	12	11	8	10.3			
"	4	12	12	7	9.6	12	16	7	11.	11	17	7	11.6	22	19	14	18.3			
"	5	12	15	10	12.3	14	15	10	13.	5	4	4	4.3	12	12	9	11.			
"	6	17	10	11	12.6	17	19	12	16.	18	19	11	16.	16	17	11	14.6			
"	7	8	11	7	8.6	10	10	7	9.	6	5	3	4.6	12	14	9	11.6			
"	8	16	19	13	16.	17	20	12	16.3	12	16	9	12.3	20	18	15	17.6			
"	9	12	16	8	12.	17	15	14	15.3	11	11	8	10.	17	16	13	15.3			
"	10	20	18	17	18.3	22	22	16	20.	17	15	10	14.	24	18	20	20.6			
"	11	15	14	9	12.6	14	18	11	14.3	8	11	4	7.6	14	18	6	12.6			
"	12	14	13	9	12.	16	22	14	17.3	14	16	11	13.6	12	16	6	11.3			
"	13	10	8	6	8.	7	11	5	7.6	7	9	3	6.3	14	15	7	12.			
"	14	10	9	7	8.6	12	13	10	11.6	14	14	8	12.	10	14	8	10.6			
"	15	17	19	15	17.	12	16	9	12.3	12	16	8	12.	24	21	21	22.			
"	16	11	11	4	8.6	14	15	11	13.3	8	8	5	7.	14	17	7	12.6			
"	17	24	22	20	20.	14	14	9	12.3	16	18	11	15.	12	13	8	11.			
"	18	17	16	9	14.	9	9	4	7.3	20	21	9	16.6	22	22	11	18.3			
"	19	14	18	14	15.3	16	18	12	16.	22	22	15	19.6	18	16	12	15.3			
"	20	12	16	8	12.	14	17	9	13.3	17	17	12	15.3	22	15	15	17.3			
"	21	20	17	12	16.3	14	16	7	12.3	20	18	9	15.6	22	17	14	17.6			
"	22	24	23	20	22.3	6	15	6	9.	17	18	10	15.	14	14	10	12.6			
"	23	10	12	6	9.3	7	9	3	6.3	8	11	5	8.	23	23	20	22.			
"	24	10	11	7	9.3	10	12	8	10.	12	12	7	10.3	12	13	10	11.6			
"	25	18	14	13	11.6	13	15	5	11.	9	8	4	7.	14	19	12	11.6			
"	26	14	13	11	12.6	16	18	12	15.3	22	20	8	16.6	22	21	13	18.6			
"	27	17	14	20	17.	15	17	8	13.3	10	11	6	9.	13	14	8	11.6			
"	28	14	18	8	13.3	23	18	15	18.6	16	17	12	15.	17	19	10	15.3			
"	29	14	16	14	12.6	12	15	11	12.3	14	18	7	13.	17	20	6	14.3			
"	30	20	21	18	19.6	22	23	14	19.6	20	19	13	17.3	18	18	16	17.3			
"	31	12	13	8	11.	8	10	4	7.3	9	8	6	7.6	8	10	3	7.			
"	32	7	14	4	8.3	11	9	7	9.	17	14	12	14.3	14	13	9	12.			
"	33	14	15	11	13.3	12	13	9	11.3	20	18	15	17.6	22	20	17	19.6			
"	34	10	12	7	9.6	11	14	7	10.6	6	8	3	5.	10	13	9	10.6			
"	35	8	12	4	8.	11	11	7	9.6	5	7	4	5.3	7	10	5	7.3			
"	36	16	16	10	14.	18	18	9	15.	22	21	16	19.6	18	22	14	18.			

B = scored by writer.

C = scored by assistant in Psychological Department.

F = scored by assistant in Psychological Department.

Av. = average of 3 scores.

TABLE IIIe. (GROUP C—continued)

EBBINGHAUS TEST:												D															
A			B			C			D			A			B			C			D						
B	C	F	A _{v.}	t	sc	B	C	F	A _{v.}	t	sc	B	C	F	A _{v.}	t	sc	B	C	F	A _{v.}	t	sc				
C	1	8	9	9	8 ¹	80	96	9	9	9	9	65	78	8	9 ¹	8	8 ¹	52	62	7	8	5	106	170			
“	2	9	9	9	9	45	54	8	8	8	8	162	227	6	7	4 ¹	5 ¹	86	155	7	7	9	67	94			
“	3	10	10	10	10	75	90	9	9	9	9	112	134	10	10	10	10	215	215	8	8	7	215	301			
“	4	9	9	9	9	85	102	9	8	9	8	108	130	9	9 ¹	10	9 ¹	83	7	7	8	8	7	131	183		
“	5	9	9	9	9	51	10	10	10	10	9	90	108	8	7	8	7 ¹	91	127	6	4	4	4	300	600		
“	6	9	10	10	9 ²	45	51	10	10	10	10	72	72	10	10	10	10	...	80	8	9 ¹	10	9	180	196		
“	7	10	10	10	10	30	39	10	10	10	10	125	10	10	10	10	10	53	7	7	9	7	132	185			
“	8	10	10	10	10	30	39	10	10	10	10	50	60	9	9	10	9 ¹	47	56	8	9	8	9	82	90		
“	9	10	10	10	10	65	85	8	8	7	7 ¹	50	70	9	9 ¹	10	9 ¹	50	50	55	8	8	6	80	84		
“	10	10	10	10	10	58	9	9	9	9	9	79	90	10	9	10	9 ¹	70	70	8	9	8	7	70	98		
“	11	10	10	10	10	45	87	6	7	52	83	9	9	8	8	7 ¹	70	84	7	7	7	7	150	210			
“	12	10	10	10	10	95	9	9	9	9	115	138	8	8	7 ¹	8	104	146	7	5	7 ¹	7	135	189			
“	13	9	8	9	8 ¹	73	88	9	7	7	7 ¹	91	127	9	10	9 ²	10	9 ²	53	8	9	9	9	100	120		
“	14	10	10	10	10	38	38	10	10	10	10	64	64	10	10	10	10	...	64	64	7	7	7	7	130	208	
“	15	8	9	9	8 ¹	48	58	9	9	9	9	34	41	10	10	9	9 ¹	50	50	50	50	57	9	7	84	134	
“	16	10	10	10	10	72	72	10	10	10	10	128	154	10	10	10	10	...	103	103	103	103	103	9	123	148	
“	17	8	8	9	8 ¹	94	113	9	9	9	9	112	134	10	10	10	10	...	66	4	4	4	4	4	90	207	
“	18	8	9	8 ¹	8 ²	48	58	8	6	6	6 ¹	53	85	7	7	8	7 ¹	41	57	68	8	9	8	8	45	54	
“	19	10	10	10	10	70	70	10	10	10	10	46	64	8	8	7 ¹	8	59	83	7	7	7	7	86	120		
“	20	9	9	9	9	42	50	8	7	7 ¹	50	128	154	10	10	10	10	...	57	57	57	57	57	7	200	240	
“	21	10	10	10	10	50	50	9	9	9	9	45	45	9	9	10	10	...	58	58	58	58	58	7	78	112	
“	22	9	10	10	9 ²	42	9 ¹	9	9	9	9 ¹	45	45	9	9	10	10	...	66	66	66	66	66	8	8	160	
“	23	9	10	10	9 ²	49	9 ¹	9	9	9	10	9 ¹	54	65	10	10	10	10	...	63	63	63	63	63	7	5	124
“	24	10	10	10	10	100	100	10	10	10	10	130	130	9	9 ¹	10	10	...	75	75	75	75	75	7	7	298	
“	25	10	10	10	10	60	60	9	10	10	10	103	103	9	8 ¹	10	10	...	53	53	53	53	53	8	9	?	
“	26	9	10	10	9 ¹	38	10	10	10	10	10	50	50	9	9 ¹	10	10	...	90	90	90	90	90	8	9	120	
“	27	9	10	10	9 ²	27	8	8	8	8	8	65	91	8	8	9	9 ¹	62	87	7	8	8	7	77	108		
“	28	10	10	10	10	80	80	10	10	10	10	130	10	10	10	10	10	...	66	66	66	66	66	10	10	116	
“	29	10	10	10	10	65	9	10	10	10	9 ¹	85	85	7	8	8	8 ¹	49	69	7	5	7	7	105	168		
“	30	9	10	9 ²	43	9	9	9	9	9	9	42	50	9	9 ¹	9 ¹	40	48	48	48	48	7	7	87	122		
“	31	10	10	10	10	60	60	10	10	10	10	70	91	9	9 ¹	9 ¹	40	56	56	56	56	7	7	170	272		
“	32	10	10	10	10	72	72	9	10	10	10	131	131	10	10	10	10	...	92	92	92	92	92	10	9	118	
“	33	9	10	10	9 ²	40	48	8	9	9	8 ¹	53	64	6	6	6 ¹	6 ¹	73	131	131	131	131	131	7	7	136	
“	34	9	9	9	9	40	48	8	9	9	8 ¹	131	183	10	10	10	10	...	65	65	65	65	65	7	7	87	
“	35	8	9	9	8 ¹	108	130	9	8 ¹	7 ¹	8 ¹	9	9	9	9 ¹	10	10	...	96	96	96	96	96	8	9	35	
“	36	10	10	10	10	65	65	9	9	9	9	80	10	10	10	10	10	...	55	55	55	55	55	8	9	42	

B_v = average of 3 scores.
t = time in seconds.

sc = score, in terms of seconds, after penalizing.
B = scored by writer.
C = scored by assistant in Psychological Department.
F = scored by assistant in Psychological Department.

TABLE IIIf. DELINQUENT GROUP (D)
ORIGINAL SCORES

EASY OPPOSITES:

	D	A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
	D 1	9½	..	52	123	14½	..	45	79	8	..	50	125	8	..	62	155
"	2	17	..	67	97	16½	..	47	69	17½	..	48	66	15½	..	52	85
"	3	19	..	40	47	17	..	45	63	14½	..	38	67	18½	..	40	48
"	4	17½	..	52	69	17½	..	48	64	19½	..	34	37	19½	..	38	41
"	5	10	..	52	117	14½	..	48	82	15	..	72	120	12	..	50	102
"	6	18½	..	64	80	18½	..	120	145	16½	..	90	136	16½	..	90	132
"	7	12	..	130	154	14	..	115	184	13	..	120	230	11½	..	131	319
"	8	13	..	55	99	15	..	47	77	13	..	75	144	16	..	50	75
"	9	13½	..	66	122	11½	..	65	135	10	..	98	221	7½	..	63	163
"	10	12	..	59	120	11½	..	47	98	11	..	59	125	8½	..	56	138
"	11	15½	..	65	105	15	..	58	96	16½	..	57	83	19	..	43	48
"	12	14	..	52	96	12½	..	45	91	10½	..	60	133	11	..	62	137
"	13	18	..	65	84	17	..	70	97	15	..	70	119	17½	..	70	94
"	14	19	..	48	54	17	..	72	102	14½	..	44	76	18½	..	49	59
"	15	16½	..	42	62	18	..	66	82	18	..	67	86	13½	..	89	164
"	16	7½	..	132	341	11	..	116	359	7	..	107	281	6½	..	82	222
"	17	14½	..	53	93	15½	..	49	77	16	..	66	102	15½	..	70	114
"	18	18½	..	42	51	15	..	43	70	18	..	65	87	17	..	57	81
"	19	13	..	77	135	9½	..	88	206	8½	..	52	128	10	..	65	146
"	20	18½	..	55	69	17½	..	50	69	14½	..	60	103	17	..	62	88
"	21	15	..	55	94	15½	..	73	116	11	..	67	145	6½	..	72	198
"	22	13	..	145	259	18½	..	79	96	16	..	64	99	16½	..	59	86
"	23	19½	..	50	54	18	..	55	69	18½	..	70	88	18½	..	68	83
"	24	17	..	68	95	18½	..	52	65	16½	..	58	88	17½	..	70	94
"	25	11	..	100	224	12	..	130	258	11	..	80	170	6	..	70	192
"	26	2	..	95	311	2	..	124	412	1	..	65	219	2½	..	65	247
"	27	18	..	35	44	19	..	40	45	15½	..	63	100	16½	..	48	70
"	28	17½	..	43	57	17	..	40	55	18	..	59	76	19½	..	43	47
"	29	17	..	47	65	17½	..	50	62	15½	..	57	91	17	..	48	66
"	30	4	..	52	164	8½	..	53	134	9	..	40	95	11	..	40	87

r = number right.

w = number wrong.

t = time in seconds.

sc = score, in terms of seconds, after penalizing.

All fractions are dropped in scores.

½ + = number above.

½ - = number itself.

TABLE IIIg. (GROUP D—continued)

HARD OPPOSITES:

		A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
D	1	..	20	60	360	..	20	60	360	..	20	84	424	..	20	90	450
"	2	9	16	115	597	20 $\frac{1}{2}$	12	130	550	11	16	97	491	6	18	75	413
"	3	11	15	190	951	23	12	95	386	10	15	155	786	23	9	200	770
"	4	29	9	165	579	36	7	200	588	27 $\frac{1}{2}$	8	165	589	29	6	102	339
"	5	..	20	60	360	..	20	53	318	4	18	90	507	1	19	90	529
"	6	11 $\frac{1}{2}$	16	150	600	21 $\frac{1}{2}$	12	210	875	10	13	223	1049	21	12	240	1008
"	7	5	18	150	835	9	17	140	735	5	18	145	808	7	16	153	813
"	8	..	20	105	630	3	19	110	633	3	19	110	633	14	14	80	381
"	9	3	19	83	477	..	20	70	420	..	20	94	564	2	19	60	349
"	10	3	19	70	403	6	18	73	402	..	20	72	432	..	20	75	450
"	11	5	18	143	797	20	13	135	583	21 $\frac{1}{2}$	11	110	447	15	15	140	665
"	12	7	17	60	323	6	18	61	356	15 $\frac{1}{2}$	13	67	309	6	17	58	316
"	13	29 $\frac{1}{2}$	9	160	557	27 $\frac{1}{2}$	9	155	559	21	11	150	624	21	10	125	510
"	14	18	12	147	645	27	9	243	645	19 $\frac{1}{2}$	10	129	539	17	11	123	539
"	15	16 $\frac{1}{2}$	14	162	756	18 $\frac{1}{2}$	13	106	575	14	14	115	549	23	11	120	481
"	16	6	18	170	935	9	17	126	662	3	19	116	667	..	20	99	594
"	17	21	12	124	540	22	12	155	639	18 $\frac{1}{2}$	11	195	840	12	13	150	723
"	18	25	9	142	535	16	11	115	489	21	10	143	584	19	10	150	630
"	19	..	20	108	648	6	18	84	462	3	19	100	575	3	19	110	633
"	20	12	15	122	603	13	15	92	449	9	17	95	505	8	15	110	571
"	21	8	15	73	380	6	18	71	391	..	20	77	462	1	19	72	423
"	22	11	16	192	984	12	16	208	1040	4 $\frac{1}{2}$	18	125	701	..	20	125	750
"	23	35	6	200	440	49 $\frac{1}{2}$	2	142	256	29	9	132	464	30	6	106	273
"	24	10	16	110	564	16	14	109	505	15 $\frac{1}{2}$	14	140	655	6	17	140	762
"	25	..	20	80	480	2	19	75	436	..	20	50	300	3	18	95	517
"	26	..	20	100	600	..	20	120	720	..	20	90	540	2	19	73	425
"	27	26	9	140	517	30	9	145	499	19	11	80	341	15	13	100	463
"	28	37	5	88	240	30	8	102	344	28	7	180	638	24	8	200	643
"	29	19	13	72	315	19	12	102	441	3	19	97	558	18	13	67	297
"	30	5	17	60	330	9	17	85	446	2	19	60	349	..	20	60	360

r = score of correct and partially correct

w = number wrong.

t = time in seconds.

sc = score, in terms of seconds, after penalizing.

TABLE IIIh. (GROUP D—continued)
MEMORY FOR UNRELATED WORDS:

	<i>A</i>		<i>B</i>		<i>C</i>		<i>D</i>	
	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>
D 1	4	..	5	..	6	2	5	..
" 2	7	..	7	1	4	..	5	1
" 3	7	..	5	1	9	1	8	..
" 4	8	..	8	..	7	..	8	..
" 5	10	1	7	1	5	1	10	..
" 6	4	..	3	..	7	..	5	..
" 7	3	..	5	1	4	1	3	2
" 8	10	1	9	1	8	..	8	2
" 9	4	1	5	..	6	1	2	..
" 10	9	1	8	1	5	..	7	1
" 11	5	3	3	3	6	1	4	1
" 12	5	3	7	1	8	..	9	..
" 13	8	..	5	1	6	..	7	..
" 14	8	1	7	3	3	2	7	..
" 15	7	..	7	..	6	1	2	1
" 16	6	..	4	..	6	2	8	2
" 17	9	..	8	1	4	2	10	2
" 18	7	3	6	2	6	3	7	1
" 19	4	1	3	1	7	3	6	1
" 20	5	..	5	1	6	..	5	2
" 21	13	2	5	..	10	1	5	1
" 22	7	..	4	..	5	1	5	..
" 23	7	..	7	..	6	..	6	1
" 24	2	3	5	5	5	3	6	1
" 25	2	9	3	1	4	2	1	..
" 26	3	1	2	1	7	..	5	..
" 27	7	..	5	..	5	..	8	..
" 28	7	1	7	..	9	1	7	..
" 29	4	..	7	..	6	..	5	..
" 30	4	4	4	6	3	2	6	4

r = number remembered, that are right.*w* = number added, not on list.

TABLE IIIi. (GROUP D—continued)

MEMORY, LOGICAL PASSAGES:

		A			B			C			D						
		B	C	F	B	C	F	B	C	F	B	C	F	Av.			
				Av.						Av.				Av.			
D	1	3	3	0	2.	5	4	2	3.6	3	2	1	2.	3	2	2	2.3
"	2	7	9	3	6.3	7	8	3	5.6	5	5	2	4.	10	10	7	9.
"	3	12	13	6	10.3	10	12	2	10.6	7	6	4	5.6	6	6	3	5.
"	4	4	4	2	3.3	13	14	5	10.6	6	5	3	4.6	12	14	7	11.
"	5	6	9	3	6.	10	12	4	8.6	6	7	5	6.	9	11	6	8.6
"	6	11	12	2	8.3	11	8	2	7.	2	1	0	1.	5	7	3	5.
"	7	4	5	3	4.	5	6	1	4.	4	4	2	3.3	5	5	3	4.3
"	8	5	6	2	4.3	7	7	2	5.3	3	5	1	3.	2	4	1	2.3
"	9	2	3	1	2.	5	4	3	4.	3	4	2	3.	3	3	1	2.3
"	10	3	3	0	2.	6	5	2	4.3	3	2	0	1.6	4	3	1	2.6
"	11	2	3	0	1.6	4	5	2	3.6	5	10	2	5.6	4	4	2	3.3
"	12	4	7	2	4.3	8	10	3	7.	4	2	1	2.3	5	5	2	4.
"	13	4	8	3	5.	11	14	8	11.	10	10	4	8.	7	8	3	6.
"	14	8	6	3	5.6	7	11	3.	7	4	6	2	4.	5	10	4	6.3
"	15	3	2	1	2.	8	12	4	8.	5	8	3	5.3	4	9	2	5.
"	16	4	5	2	3.6	3	2	1	2.	4	2	2	2.6	4	4	2	3.3
"	17	7	8	2	5.6	10	13	6	9.6	5	9	3	5.6	4	8	2	4.6
"	18	8	12	4	8.	14	17	8	13.	8	10	6	8.	14	18	11	14.3
"	19	5	7	1	4.3	4	3	1	2.6	3	3	2	2.6	..	..	..	..
"	20	2	2	0	1.3	8	8	4	6.6	..	..	..	..	8	7	4	6.3
"	21	2	6	0	3.6	6	4	4	4.6	5	8	4	4.3	6	6	4	5.3
"	22	3	3	1	2.3	7	6	2	5.	3	4	1	2.6	4	5	2	3.6
"	23	12	14	9	11.6	13	17	8	12.6	19	22	16	19.	17	18	11	15.3
"	24	8	9	5	7.3	7	8	5	6.6	6	7	2	5.	10	8	6	8.
"	25	3	2	1	2.	3	1	1	1.6	3	1	2	2.	2	2	1	1.6
"	26	3	3	1	2.3	3	2	1	2.	3	2	1	2.	3	2	0	1.6
"	27	6	8	3	5.6	8	8	4	6.6	4	6	1	3.6	4	6	2	4.
"	28	8	9	6	7.6	14	15	10	13.	10	11	4	8.3	14	15	11	13.3
"	29	6	4	2	4.	6	7	2	5.	3	2	1	2.	5	4	3	4.
"	30	5	9	3	5.6	4	8	2	4.6	6	8	3	5.6	10	10	7	9.

B = scored by writer.

C = scored by assistant in Psychological Department.

F = scored by assistant in Psychological Department.

Av. = average of 3 scores.

TABLE IIIj. (GROUP D—continued)

EBBINGHAUS TEST:				A			B			C			D			
B	C	F	A _{v.}	t	sc	B	C	F	A _{v.}	t	sc	B	C	F	A _{v.}	
D	1	0	0	0	130	455	1	1	1	110	352	1	1	1	108	346
“	2	7	6	6	63	150	270	5	6	9	63	7	5	63	180	288
“	3	8	7	7	115	184	4	4	4	130	320	6	7	7	95	152
“	4	9	9	9	80	96	6	7	7	68	109	8	8	9	96	134
“	5	5	3	2	21	90	361	3	3	6	4	75	173	3	3	4
“	6	9	10	10	93	170	132	7	7	6	63	187	299	8	7	65
“	7	2	3	2	24	220	506	1	1	1	130	416	0	0	0	109
“	8	4	3	5	4	225	421	1	1	1	200	460	3	2	2	100
“	9	2	2	2	2	145	421	1	1	1	92	267	1	1	1	93
“	10	2	3	3	23	113	314	2	4	3	93	242	2	1	1	112
“	11	5	6	5	54	150	300	4	5	4	210	483	6	5	4	87
“	12	4	3	4	34	75	173	4	4	4	68	156	3	4	3	50
“	13	10	10	10	10	150	9	10	10	94	194	7	8	63	130	
“	14	8	7	9	8	80	112	5	5	4	99	198	6	5	5	67
“	15	7	5	5	54	138	248	6	7	6	193	309	3	3	3	105
“	16	2	4	4	34	138	359	2	2	2	222	644	2	2	2	160
“	17	4	4	5	44	150	245	5	5	6	192	384	3	3	3	157
“	18	8	7	8	74	80	112	6	6	7	63	90	144	6	5	5
“	19	3	2	3	24	240	624	1	0	1	195	624	4	4	4	260
“	20	2	2	2	24	220	638	2	1	1	195	566	4	4	4	115
“	21	2	2	2	24	79	229	1	1	1	73	234	1	1	1	70
“	22	4	4	2	34	198	515	2	2	2	248	719	3	4	3	205
“	23	10	10	10	52	52	8	9	8	65	78	10	10	10	60	
“	24	6	6	5	54	140	252	4	5	6	210	420	6	7	5	80
“	25	0	0	0	180	630	0	0	0	180	630	0	0	0	300	
“	26	0	0	0	190	665	0	0	0	120	420	0	0	0	150	
“	27	8	9	9	83	65	78	7	8	10	80	112	5	5	4	113
“	28	8	8	8	83	100	140	10	10	10	10	97	8	8	8	97
“	29	8	9	9	9	192	230	7	7	7	236	378	7	6	63	100
“	30	9	8	8	83	90	126	7	7	6	63	62	6	7	7	60

B = scored by writer.*C* = scored by assistant in Psychological Department.*F* = scored by assistant in Psychological Department.*A_{v.}* = average of 3 scores.*t* = time in seconds.*sc* = score, in terms of seconds, after penalizing.

TABLE IIIk. EVENING SETTLEMENT HOUSE GROUP (E)
ORIGINAL SCORES

EASY OPPOSITES:

	E	A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
"	1	18	..	50	64	18½	..	65	78	18½	..	72	90	19½	..	81	88
"	2	17	..	50	71	18½	..	55	67	19	..	55	62	20	..	53	53
"	3	14½	..	104	178	17	..	99	141	15½	..	85	135	20	..	78	78
"	4	19	..	63	71	19	..	52	59	19½	..	50	54	20	..	42	42
"	5	18½	..	46	56	17½	..	58	78	18½	..	71	71	18½	..	74	74
"	6	19	..	59	69	18	..	46	58	17½	..	54	75	15½	..	22	36
"	7	19½	..	42	46	17½	..	58	77	19	..	65	76	19	..	50	54
"	8	20	..	..	91	20	..	..	63	20	..	48	48	19	..	83	90
"	9	19½	..	50	54	19½	..	25	28	18½	..	38	46	20	..	32	32
"	10	19	..	37	42	20	..	..	35	19½	..	42	46	20	..	41	41
"	11	20	..	..	60	18	..	70	88	19½	..	78	84	19	..	81	88
"	12	20	..	..	46	19	..	54	61	19	..	55	64	17	..	42	58
"	13	15	..	70	119	16	..	60	90	18½	..	100	125	15½	..	125	198
"	14	19½	..	52	56	18	..	60	75	17	..	56	79	19½	..	57	62
"	15	17	..	50	70	19½	..	41	44	16	..	82	126	18½	..	82	99
"	16	19	..	39	46	20	..	..	43	20	..	44	44	19½	..	47	51
"	17	20	..	..	77	19	..	53	60	19	..	65	76	18½	..	51	61
"	18	20	..	41	41	18	..	41	51	19	..	42	49	20	..	35	35
"	19	19	..	55	64	19½	..	56	61	18	..	58	75	20	..	68	68
"	20	19½	..	45	49	17	..	60	83	19½	..	84	91	20	..	73	73
"	21	20	..	46	46	18	..	42	53	17½	..	74	99	19	..	43	48
"	22	14	..	130	232	17	..	75	107	14	..	74	132	11	..	66	143
"	23	19	..	80	87	20	..	..	74	18½	..	76	92	19	..	86	97
"	24	19½	..	45	49	19	..	50	56	18	..	55	69	19	..	43	47
"	25	18	..	83	104	16	..	48	72	16	..	74	114	11½	..	82	179
"	26	19½	..	72	78	20	..	..	90	16½	..	79	116	20	..	61	61
"	27	19½	..	53	57	19	..	43	48	20	..	48	48	20	..	65	65
"	28	18	..	59	69	18	..	56	70	18	..	56	72	19	..	109	109
"	29	19	..	83	93	20	..	..	65	16½	..	75	113	19	..	83	97
"	30	19½	..	100	108	18	..	71	89	17	..	66	91	15½	..	66	105
"	31	15	..	90	150	17	..	50	69	14½	..	67	118	15	..	63	106
"	32	19	..	54	63	20	..	..	45	17½	..	53	70	20	..	50	50
"	33	16½	..	118	172	13	..	76	143	18½	..	92	112	15½	..	76	120
"	34	10	..	99	223	17½	..	80	107	20	..	..	176	20	..	..	98

r = number right.*w* = number wrong.*t* = time in seconds.*sc* = score, in terms of seconds, after penalizing.

All fractions are dropped in scores.

½ + = number above.

½ — = number itself.

TABLE III. (GROUP E—continued)

HARD OPPOSITES:

		A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
E	1	24½	9	74	353	34	7	200	613	18½	12	110	478	19	11	98	417
"	2	30	8	124	421	38	6	180	489	29	8	240	828	27	8	220	787
"	3	13	5	240	1170	18	12	240	1050	10½	15	215	1086	13	14	210	1012
"	4	34	3	250	557	36	5	188	482	29	7	146	492	37	3	164	434
"	5	35	6	181	536	39	4	108	275	38	5	285	756	30	7	162	536
"	6	52	1	200	316	33	7	198	621	16½	12	100	637	25	8	162	598
"	7	..	..	..	865	..	..	..	666	32	8	345	1127	37	6	192	545
"	8	44	1	60	117	36	5	200	563	32	5	200	615	32	6	203	609
"	9	53	0	105	152	44	2	55	117	37½	6	82	229	48	1	66	118
"	10	..	..	..	156	..	..	..	198	44½	2	133	282	45	2	120	235
"	11	..	..	..	603	..	..	..	588	22	11	132	534	36	7	138	398
"	12	34½	5	204	711	33	7	288	870	25½	8	193	709	38	2	170	427
"	13	21½	9	93	364	26	10	140	525	20	10	190	795	18	11	180	741
"	14	43½	3	135	302	34	6	124	358	31	5	115	362	29	5	83	272
"	15	24	11	142	469	41	4	96	233	23	11	161	645	20	11	156	654
"	16	44	2	103	221	37	5	150	410	41	2	190	437	45	3	146	308
"	17	..	..	..	1087	..	..	..	512	21	11	200	1177	23	7	176	662
"	18	47	3	113	207	43½	3	71	162	29½	6	300	935	47	1	120	213
"	19	47	2	121	236	44	1	105	216	37	5	202	509	32	6	203	638
"	20	..	..	..	180	..	..	..	210	52	0	144	218	50	0	157	229
"	21	37	5	162	449	44½	4	134	300	28	7	135	473	30	6	127	408
"	22	3	19	115	661	21	12	57	202	4	18	132	743	0	20	126	756
"	23	33	7	237	758	31	6	192	590	33	8	300	958	38	6	178	491
"	24	31	9	150	517	34½	5	112	318	25	9	124	485	33	5	118	359
"	25	23	11	111	445	18	3	273	398	4	18	224	1262	14	13	218	1023
"	26	25	9	270	997	34	8	144	451	..	..	..	..	..	..	..	..
"	27	43	2	109	220	45½	3	106	223	39	4	218	551	50	2	177	312
"	28	29½	9	176	213	37	6	200	567	25½	9	166	438	34	5	162	478
"	29	27	7	207	664	32	5	218	685	19½	11	217	933	16	12	231	1026
"	30	..	..	..	1183	..	..	..	595	21½	11	122	424	14	14	125	470
"	31	15½	13	130	599	19	13	150	657	11	15	120	630	13	14	132	636
"	32	44	2	141	275	43	3	80	181	38	3	133	296	52	0	102	156
"	33	9	17	187	982	12	16	112	560	17	3	128	578	16	11	136	575
"	34	20	13	192	805	30	8	133	451	0	20	123	738	3	19	108	621

r = score of correct and partially correct.

w = number wrong.

t = time in seconds.

sc = score, in terms of seconds, after penalizing.

TABLE IIIIm. (GROUP E—continued)
MEMORY FOR UNRELATED WORDS:

	A		B		C		D	
	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>
E 1	9	..	9	..	10	1	10	..
" 2	5	..	5	..	8	..	7	..
" 3	8	..	8	..	4	..	5	..
" 4	9	..	7	..	6	1	7	..
" 5	8	1	5	2	6	..	6	..
" 6	8	..	7	..	7	1	9	..
" 7	8	..	9	..	8	..	9	..
" 8	9	1	6	1	10	..	7	1
" 9	8	1	7	..	5	..	8	1
" 10	9	1	12	1	5	..	7	2
" 11	7	..	7	2	..	..	..	..
" 12	6	2	6	..	9	..	7	..
" 13	11	..	11	..	7	..	9	..
" 14	8	..	6	..	9	2	9	..
" 15	10	..	8	4	10	1	10	2
" 16	9	..	7	..	9	..	7	2
" 17	9	..	11	..	5	1	8	..
" 18	11	..	4	..	9	..	8	..
" 19	8	2	6	2	8	..	7	..
" 20	11	..	8	..	10	..	7	..
" 21	8	..	7	..	10	1	9	1
" 22	6	..	5	2	8	1	6	1
" 23	10	2	7	1	8	..	9	1
" 24	8	1	8	2	6	1	6	2
" 25	6	1	5	2	8	..	7	..
" 26	9	1	7	..	8	..	6	..
" 27	11	2	10	3	11	4	9	..
" 28	7	4	5	2	6	7	5	4
" 29	8	..	8	1	10	..	9	..
" 30	10	1	9	2	11	..	6	2
" 31	7	2	9	..	9	..	9	..
" 32	12	2	7	2	9	6	9	1
" 33	6	2	4	1	5	..	6	..
" 34	6	1	5	1	4	2	8	..

r = number remembered, that are right.
w = number added, not on list.

TABLE IIIIn. (GROUP E—continued)

MEMORY, LOGICAL PASSAGES:

	<i>B</i>	<i>C</i>	<i>A</i>	<i>F</i>	<i>Av.</i>	<i>B</i>	<i>C</i>	<i>B</i>	<i>F</i>	<i>Av.</i>	<i>B</i>	<i>C</i>	<i>C</i>	<i>F</i>	<i>Av.</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>F</i>	<i>Av.</i>
E	1	6	5	3	4.6	3	4	3	3.6	11	10	7	8.6	10	10	3	7.6			
"	2	12	13	10	11.6	10	9	7	8.6	2	2	1	1.6	12	16	7	11.6			
"	3	1	3	1	1.6	3	4	3	3.3	6	3	3	4.	8	9	5	7.3			
"	4	1	1	1	1.	6	6	3	5.	8	9	5	7.3	..	..	..	..
"	5	12	12	7	10.3	6	8	5	6.3	2	2	1	1.6	9	9	9	9.			
"	6	6	5	4	5.	5	5	3	4.3	9	9	7	8.3	20	20	11	17.			
"	7	6	7	6	6.3	2	4	1	3.3	3	2	0	1.6	11	13	5	9.6			
"	8	5	5	5	5.	4	3	4	3.3	..	..	..	..	6	5	1	4.		
"	9	16	13	9	12.6	12	9	6	9.	17	19	9	15.	22	23	17	20.6			
"	10	14	12	11	12.3	9	9	5	7.6	10	13	9	10.6	8	10	9	9.			
"	11	12	14	7	11.	9	10	5	8.	9	8	6	7.7	8	10	7	8.3			
"	12	6	6	4	5.3	10	10	7	9.	7	8	4	6.3	15	17	12	14.6			
"	13	8	5	3	5.3	6	5	2	4.3	9	9	4	7.3	5	5	4	4.6			
"	14	6	6	4	5.3	9	8	7	8.	..	..	..	..	10	11	9	10.		
"	15	4	3	2	3.	3	3	2	2.6	1	1	0	.6	7	8	3	6.			
"	16	6	9	4	6.3	7	6	5	6.	..	..	..	..	9	10	9	9.3		
"	17	9	7	5	7.	7	7	3	5.6	6	9	5	6.6	14	16	9	13.			
"	18	12	10	10	10.6	13	10	9	10.6	20	21	10	17.	13	17	9	13.			
"	19	8	7	4	6.3	4	4	3	3.6	7	11	3	7.	9	7	4	6.6			
"	20	14	12	10	12.	6	8	5	6.	17	14	15	15.3	13	8	11	10.6			
"	21	12	11	10	11.	10	9	9	9.3	5	10	2	5.6	15	18	11	14.6			
"	22	3	6	3	4.	5	4	2	3.6	4	4	2	3.3	2	3	2	2.3			
"	23	9	10	6	8.3	8	6	7	7.	3	3	1	2.3	9	12	9	9.3			
"	24	9	9	8	8.6	11	9	6	8.6	11	10	4	8.3	12	13	10	11.6			
"	25	8	8	6	7.3	5	5	5	5.	3	4	1	2.6	7	7	4	6.			
"	26	7	8	5	6.6	6	6	5	5.6	6	4	2	4.	3	3	2	2.6			
"	27	12	12	10	11.3	8	8	7	7.6	15	13	10	12.6	18	18	7	14.3			
"	28	8	6	5	6.3	7	6	3	5.3	6	8	4	6.	11	13	9	11.			
"	29	5	3	3	3.6	7	6	5	6.	2	2	1	1.6	3	7	2	4.			
"	30	3	4	1	3.6	8	11	9	9.3	4	4	2	3.3	12	12	9	11.			
"	31	3	5	0	2.6	4	5	4	4.3	7	6	2	5.	8	8	5	7.			
"	32	14	10	9	11.	9	10	9	9.3	10	12	6	9.3	18	19	12	15.			
"	33	3	6	3	4.	3	4	3	3.3	4	2	1	2.3	12	13	5	10.			
"	34	8	9	7	8.	6	7	3	5.3	8	5	2	5.	9	12	6	9.			

B = scored by writer.*C* = scored by assistant in Psychological Department.*F* = scored by assistant in Psychological Department.*Av.* = average of 3 scores.

TABLE IIIo. (GROUP E—continued)

B = scored by writer.

Scoring by willci. Psychological Department. Denartment.

Avg. = average of 3 scores.

Av. = average or J score.
 t = time in seconds.
 sc = score, in terms of seconds, after penalizing.

TABLE IIIp. SERVANT GIRL GROUP (S)
ORIGINAL SCORES

EASY OPPOSITES:

		A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
S	1	13½	..	95	174	17	..	72	99	16½	..	69	103	10½	..	95	210
"	2	12	..	111	235	18	..	65	81	16	..	55	85	15½	..	75	119
"	3	15	..	52	87	17	..	38	52	18	..	37	46	18½	..	38	46
"	4	18½	..	52	63	19	..	68	76	18	..	44	57	18	..	58	73
"	5	11½	..	137	291	16	..	113	170	14	..	91	163	14½	..	87	148
"	6	18	..	76	95	19	..	43	48	17	..	65	89	17½	..	66	89
"	7	18½	..	65	75	19	..	57	64	17	..	63	89	19	..	48	56
"	8	11½	..	85	180	13½	..	45	82	15	..	85	142	10½	..	63	139
"	9	15½	..	77	125	16½	..	58	85	15	..	82	137	13½	..	63	115
"	10	13	..	88	169	17	..	57	78	12½	..	85	166	15½	..	85	135
"	11	18½	..	52	65	18	..	60	75	17½	..	57	78	18	..	47	61
"	12	18	..	38	48	18	..	36	47	18	..	44	58	19	..	44	50
"	13	13	..	55	104	19½	..	38	41	15½	..	60	98	17½	..	50	73
"	14	11	..	55	119	11½	..	46	96	12½	..	60	118	7	..	51	96
"	15	14	..	77	138	13	..	48	90	13	..	60	115	15	..	54	88
"	16	13½	..	86	157	13	..	50	94	11	..	60	128	13½	..	54	100
"	17	18	..	88	114	19½	..	55	61	14	..	81	145	17	..	71	98
"	18	6	..	150	393	11	..	160	340	14½	..	118	202	8	..	86	219
"	19	15½	..	150	238	16	..	102	153	12	..	115	235	14	..	97	174
"	20	16½	..	72	105	19	..	52	59	15½	..	63	100	19	..	52	59
"	21	10	..	75	171	7	..	104	273	8	..	80	200	8½	..	72	177
"	22	18	..	215	260	11	..	150	188	14	..	136	243	16½	..	123	179
"	23	19½	..	120	130	18½	..	100	120	14	..	89	159	18½	..	59	71
"	24	19½	..	55	60	18½	..	37	45	18½	..	40	49	20	..	42	42
"	25	12½	..	110	215	14	..	95	166	10½	..	180	397	11½	..	115	240
"	26	11½	..	120	255	13	..	105	196	19½	..	40	44	19	..	45	51
"	27	20	..	52	52	18	..	45	50	13	..	102	196	11	..	110	238
"	28	16½	..	72	105	16	..	73	110	13	..	45	84	15½	..	45	72
"	29	18	..	61	79	17½	..	57	76	18½	..	57	71	19½	..	42	46

r = number right.*w* = number wrong.*t* = time in seconds.*sc* = score, in terms of seconds, after penalizing.

All fractions are dropped in scores.

½ + = number above.

½ — = number itself.

TABLE IIIq. (GROUP S—continued)

HARD OPPOSITES:

	S	A				B				C				D			
		r	w	t	sc	r	w	t	sc	r	w	t	sc	r	w	t	sc
"	1	3	18	145	826	16	11	185	856	10	14	150	748	8	15	112	581
"	2	13	15	175	853	20	11	120	495	11	14	155	731	9	14	110	912
"	3	34	7	128	391	37½	5	100	274	16	13	156	689	34	8	220	689
"	4	35	4	124	351	35½	7	128	382	25	9	150	560	35	4	130	367
"	5	7	16	150	799	19	13	132	579	12	12	140	660	7	15	192	1008
"	6	11	16	199	911	0	20	141	846	26	8	100	361	32	8	101	341
"	7	21½	12	202	841	24	10	136	384	23½	11	100	399	22	12	93	267
"	8	9	17	205	1076	20½	13	189	610	3	19	94	448	3	19	95	452
"	9	17	13	210	946	12	15	151	746	7	16	113	602	10	15	99	502
"	10	10	16	205	1053	22	11	90	368	10	14	116	583	10	16	104	534
"	11	36	7	92	271	26	10	117	442	14	14	142	676	26	8	130	456
"	12	26	9	99	267	24	12	71	284	11½	15	71	355	27	11	75	357
"	13	11	16	100	507	13	5	84	410	3	19	77	366	6	18	67	302
"	14	10	15	100	507	9	16	74	384	9	17	75	394	15	15	64	240
"	15	14	14	99	472	27	9	72	262	17½	11	73	263	10	15	85	430
"	16	11	15	99	496	9	17	71	373	5	18	75	418	10	15	85	420
"	17	19½	11	131	556	23½	11	132	532	8½	16	64	273	16	13	88	392
"	18	3	19	142	817	9	17	142	746	0	20	64	384	5	18	90	411
"	19	6	18	81	446	19	13	146	785	0	20	64	384	4	17	101	562
"	20	20	12	107	555	21	13	105	446	8½	16	168	879	22	11	112	456
"	21	0	20	105	630	0	20	78	468	5	18	72	401	0	20	121	726
"	22	0	20	150	900	0	20	105	630	3	19	97	557	6	18	109	600
"	23	3	19	162	932	19	13	78	342	4	18	78	439	5	17	87	479
"	24	24	10	190	738	40	5	102	263	20	12	147	626	32	7	139	443
"	25	6	18	185	1018	6	18	125	673	0	20	100	600	0	20	88	528
"	26	45	3	128	273	32	7	136	434	36½	5	118	335	43	3	115	162
"	27	11	16	121	613	5	17	178	980	3	19	162	932	0	20	105	630
"	28	12	16	117	585	3	19	117	555	3	19	105	604	2	19	90	524
"	29	36½	6	252	721	29½	9	160	557	39½	4	255	645	43	3	165	384

r = score of correct and partially correct.

w = number wrong.

t = time in seconds.

sc = score, in terms of seconds, after penalizing.

TABLE IIIr. (GROUP S—continued)
MEMORY FOR UNRELATED WORDS:

	A		B		C		D	
	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>	<i>r</i>	<i>w</i>
S 1	3	3	5	..	4	2	2	..
“ 2	4	1	2	3	7	1	5	1
“ 3	9	..	7	..	3	1	6	..
“ 4	5	1	6	..	5	..	5	..
“ 5	5	..	5	1	5	..	5	..
“ 6	7	1	7	..	8	..	9	..
“ 7	3	..	7	..	4	..	7	..
“ 8	4	2	2	2	5	2	5	..
“ 9	6	..	8	..	5	..	5	..
“ 10	6	..	6	..	6	1	6	..
“ 11	8	..	7	..	4	1	7	..
“ 12	5	..	5	..	6	..	5	1
“ 13	6	..	4	1	4	..	5	1
“ 14	4	..	5	1	5	..	5	..
“ 15	4	..	5	..	5	..	3	1
“ 16	4	..	5	..	7	..	3	..
“ 17	7	..	6	..	4	2	6	..
“ 18	4	..	5	..	5	..	4	2
“ 19	5	..	5	..	5	..	3	2
“ 20	7	1	6	..	7	..	8	..
“ 21	4	..	6	..	3	..	5	..
“ 22	4	..	1	..	3	..	4	..
“ 23	6	..	4	1	5	..	5	..
“ 24	6	1	5	..	5	1	5	..
“ 25	3	..	4	..	6	1	3	..
“ 26	8	..	5	..	6	..	5	..
“ 27	4	..	4	..	4	1	4	..
“ 28	9	..	9	..	9	..	8	1
“ 29	7	..	5	..	7	..	6	..

r = number remembered, that are right.*w* = number added, not on list.

TABLE III. (GROUP S—continued)

MEMORY, LOGICAL PASSAGES:

	<i>B</i>	<i>C</i>	<i>A</i>	<i>F</i>	<i>Av.</i>	<i>B</i>	<i>C</i>	<i>B</i>	<i>F</i>	<i>Av.</i>	<i>B</i>	<i>C</i>	<i>C</i>	<i>F</i>	<i>Av.</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>F</i>	<i>Av.</i>
S 1	2	2	1	1.6	2	2	0	1.3		1	4	0	1.6		2	6	1	3.		
" 2	3	3	1	2.3	2	2	0	1.3		0	2	0	.6		0	2	0		.6	
" 3	7	5	1	4.3	6	6	2	4.6		5	4	5	4.6		6	8	7	7.		
" 4	9	9	6	8.	4	4	2	3.3		9	7	4	6.6		16	16	10	12.		
" 5	1	1	0	.6	6	4	4	4.6		5	5	2	4.		10	8	5	7.6		
" 6	11	12	11	11.3	10	8	5	7.6		12	6	11	9.6		20	19	10	16.3		
" 7	6	8	7	7.	7	8	5	6.6		4	3	2	3.		8	9	5	7.3		
" 8	2	3	0	1.6	0	0	0	0.		7	8	2	5.6		7	7	2	5.3		
" 9	10	8	5	7.6	8	7	3	6.		6	4	2	4.		5	5	2	4.		
" 10	7	6	3	5.3	3	3	1	2.3		2	2	3	2.3		5	6	2	4.3		
" 11	6	6	3	5.	9	6	4	6.3		5	5	2	4.		10	12	5	9.		
" 12	11	9	5	8.3	10	8	5	7.6		12	9	7	9.3		12	13	5	10.		
" 13	1	3	1	1.6	0	1	0	.3		5	6	2	4.3		6	6	4	5.3		
" 14	3	4	0	2.3	4	6	2	4.		2	2	0	1.3		2	5	2	3.		
" 15	2	2	0	1.3	4	3	3	3.3		2	3	1	2.		6	7	5	6.		
" 16	1	2	0	1.	4	4	3	3.6		3	3	0	2.		4	4	5	4.3		
" 17	6	3	2	3.6	1	5	2	2.6		8	4	5	5.6		5	7	2	4.6		
" 18	2	1	2	1.6	1	2	2	1.6		0	0	0	0.		1	2	3	2.		
" 19	2	1	1	1.3	1	2	0	1.		0	0	0	0.		0	0	0	0.		
" 20	4	5	2	3.6	8	7	5	6.6		8	6	3	5.6		10	9	4	7.6		
" 21	2	2	1	1.6	2	1	2	1.6		1	2	1	1.6		5	6	4	5.		
" 22	0	0	0	0.	0	0	0	0.		0	0	0	0.		0	1	0	.6		
" 23	4	5	2	3.6	5	3	4	4.		3	3	3	3.		8	9	7	8.		
" 24	4	5	2	3.6	5	3	2	3.3		4	5	2	3.6		15	16	9	13.3		
" 25	0	0	0	0.	1	1	0	.6		2	1	1	1.3		1	1	1	1.		
" 26	2	4	2	2.6	6	5	3	4.6		10	13	12	11.6		10	10	7	9.		
" 27	0	0	0	0.	0	2	0	.6		0	0	0	0.		4	5	4	4.3		
" 28	10	10	7	9.	9	8	4	7.		8	7	2	5.6		18	14	11	14.3		
" 29	7	7	5	6.3	5	4	2	3.6		5	5	2	4.		10	12	10	10.6		

B = scored by writer.*C* = scored by assistant in Psychological Department.*F* = scored by assistant in Psychological Department.*Av.* = average of 3 scores.

TABLE III. (GROUP S—continued)

EBBINGHAUS TEST:										B										C										D									
<i>B</i>	<i>C</i>	<i>F</i>	<i>Av.</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>F</i>	<i>Av.</i>	<i>t</i>	<i>sc</i>	<i>B</i>	<i>C</i>	<i>F</i>	<i>Av.</i>	<i>t</i>	<i>sc</i>	<i>B</i>	<i>C</i>	<i>F</i>	<i>Av.</i>	<i>t</i>	<i>sc</i>																	
1	2	2	1.6	250	72	0	0	0	180	450	0	0	0	0	180	450	0	0	0	0	0	0	180	450	0	0	0	0	0	0									
2	1	1	1.1	205	656	0	0	1	0	.3	90	225	0	0	0	0	180	450	0	0	0	0	0	0	180	450	0	0	0	0	0	0							
3	8	8	8.8	108	151	8	8	8	.8	.85	119	7	6	7	6.6	124	198	7	7	5	6.3	233	419																
4	9	9	9.9	102	122	7	7	6	6.6	137	219	7	7	7	6.6	112	179	3	5	3	6	265	610																
5	0	0	0.0	105	263	1	1	1	1.6	200	580	3	3	5	3.6	172	396	1	1	0	0	160	252																
6	9	9	9.9	10	9.3	.53	.64	.6	5.5	5.3	48	.96	7	7	6	6.6	70	112	7	7	6	6.6	91	146															
7	9	8	8.8	8	8.3	.78	.109	.9	8	9	8.6	.72	.86	.8	7	8	7.6	130	182	6	5	4	5.5	130	260														
8	3	3	3	6.	132	343	3	3	2	6	95	216	2	2	2	2	93	270	1	3	1	1.6	128	371															
9	6	7	5	6.	166	119	4	4	3	3.6	97	219	3	3	0	2.2	104	302	3	4	3	3.3	106	276															
10	4	5	5	4.6	150	300	2	2	1	1.6	97	281	3	3	1	2	2	90	261	2	3	2	2.3	130	377														
11	4	4	4.5	4.3	155	357	3	3	3	3	143	372	3	3	3	3	171	445	2	3	3	2.6	230	598															
12	8	9	8.6	8	8.6	.58	.76	.6	5	4	.5	.68	136	4	5	3	4	84	193	3	5	2	3.3	123	320														
13	5	6	5.3	130	260	5	5	4	4.6	100	200	2	1	1	1.6	108	313	3	5	2	3.3	131	341																
14	3	2	2.3	85	247	3	4	5	4	.85	196	3	2	2	2.6	85	221	1	1	1	1	92	294																
15	6	5	5.3	83	186	3	4	3	3.6	.73	168	3	3	3	3.3	90	234	2	3	3	2.6	105	273																
16	3	2	1.2	100	290	2	2	2	2.3	.87	252	1	1	2	1.3	.98	314	1	1	1	2	1.3	92	294															
17	8	8	8.8	8	8.6	.58	.76	.6	5	4	.5	.68	136	4	5	3	4	84	193	3	5	2	3.3	123	320														
18	3	2	2.2	175	508	1	1	1	1	1	1	1.40	448	3	4	3	3.6	197	453	0	0	0	0	180	450														
19	1	1	1.1	152	334	1	1	1	1	1	1	1.40	448	2	2	2	2.2	210	609	0	0	0	0	180	450														
20	7	6	6.3	152	244	4	3	3	3.3	153	398	3	4	2	2	3	142	369	3	5	2	3.3	141	367															
21	2	1	1.3	192	422	1	1	1	1	1	1.21	266	2	2	2	2	108	313	2	2	2	2	95	276															
22	0	0	0	0	315	0	0	0	0	0	130	455	0	0	0	0	0	111	389	0	0	0	0	125	438														
23	3	3	2	2.6	181	469	5	4	4	4	4.3	112	258	5	4	4	4.6	107	214	2	3	2	2.3	109	316														
24	7	8	8.7	132	185	7	6	4	5.6	170	306	5	5	6	5.3	132	264	3	6	3	4	171	393																
25	6	5	5.3	240	480	4	3	3	3.3	133	346	4	4	4	4	146	336	5	5	5	5	200	400																
26	8	8	7.7	7.6	96	134	10	9	9	9.3	108	130	10	9	9.6	127	127	8	9	8	8	200	280																
27	2	1	2.1	2.6	200	580	1	0	0	3	100	350	3	3	2	3.6	188	432	1	0	1	.6	190	608															
28	7	7	7.1	90	144	7	8	8	7.6	63	88	5	4	5	4.6	115	230	6	6	5	5.6	170	306																
29	8	8	7.6	67	94	7	8	8	7.6	72	101	8	8	8	8	81	113	5	5	5	6	128	256																

B = average of 3 scores.*t* = time in seconds.*sc* = score, in terms of seconds, after penalizing.*B* = scored by writer.*C* = scored by assistant in Psychological Department.*F* = scored by assistant in Psychological Department.

2. FINAL SCORES

TABLE IVa. GROUP C

FINAL SCORES

	EASY OPPOSITES	HARD OPPOSITES	LOGICAL MEMORY	UNRELATED MEMORY	EBBINGHAUS TEST
				Correct Errors	
C 1....	58	388	12.9	31 4	102
" 2....	47	180	13.8	31 2	133
" 3....	60	263	8.7	31 1	178
" 4....	55	267	12.6	28 ..	122
" 5....	46	328	10.2	30 1	244
" 6....	43	278	15.	40 ..	100
" 7....	47	367	8.5	27 3	102
" 8....	46	128	15.6	39 2	59
" 9....	63	231	13.2	33 1	67
" 10....	41	163	18.2	30 1	75
" 11....	45	302	11.8	33 3	106
" 12....	58	295	13.6	40 1	142
" 13....	67	317	8.5	33 1	97
" 14....	30	152	10.7	29 ..	94
" 15....	41	190	15.8	35 ..	71
" 16....	49	272	10.4	32 ..	107
" 17....	65	270	14.6	40 2	135
" 18....	49	221	14.1	39 3	104
" 19....	47	162	16.8	40 2	69
" 20....	51	249	14.5	35 3	79
" 21....	38	147	15.5	45 1	125
" 22....	43	165	14.7	27 3	61
" 23....	43	180	11.4	36 2	99
" 24....	47	312	10.2	27 1	148
" 25....	38	136	10.3	33 ..	93
" 26....	45	192	15.8	31 1	65
" 27....	54	135	12.7	31 3	78
" 28....	38	272	15.6	41 1	98
" 29....	51	317	13.1	31 ..	97
" 30....	49	204	18.5	37 1	66
" 31....	47	179	8.2	31 2	89
" 32....	60	204	10.9	36 ..	103
" 33....	43	135	15.5	30 2	88
" 34....	45	255	9.	24 4	107
" 35....	51	229	7.6	37 2	129
" 36....	40	155	16.7	33 3	65

TABLE IVb. GROUP D

FINAL SCORES

	EASY OPPOSITES	HARD OPPOSITES	LOGICAL MEMORY	UNRELATED MEMORY	EBBINGHAUS TEST
				Correct	Errors
D 1....	161	499	2.5	20	2
" 2....	79	513	6.2	23	2
" 3....	56	723	7.7	29	2
" 4....	53	524	7.4	31	..
" 5....	125	426	7.3	32	3
" 6....	123	883	5.3	19	..
" 7....	222	795	3.9	15	4
" 8....	146	569	3.7	35	4
" 9....	165	453	2.8	17	2
" 10....	120	422	2.6	29	3
" 11....	83	622	3.5	18	8
" 12....	114	326	4.4	29	4
" 13....	99	563	7.5	26	1
" 14....	73	592	5.7	25	6
" 15....	99	590	5.1	22	2
" 16....	301	715	2.9	24	4
" 17....	97	686	6.4	31	5
" 18....	72	560	10.8	26	9
" 19....	154	580	2.4	20	6
" 20....	82	532	3.6	21	3
" 21....	138	414	4.5	33	4
" 22....	135	869	3.4	21	1
" 23....	74	358	14.6	26	1
" 24....	86	722	6.7	18	12
" 25....	211	433	1.8	10	12
" 26....	297	571	2.0	17	2
" 27....	65	455	5.0	25	..
" 28....	59	466	10.5	30	2
" 29....	71	403	3.8	22	..
" 30....	120	371	6.2	17	16

TABLE IVc. GROUP E
FINAL SCORES

	EASY OPPOSITES	HARD OPPOSITES	LOGICAL MEMORY	UNRELATED MEMORY Correct	UNRELATED MEMORY Errors	EBBINGHAUS TEST
E 1....	80	465	6.1	38	1	225
" 2....	63	631	8.4	25	..	292
" 3....	133	1079	6.6	25	..	346
" 4....	56	491	4.4	29	1	151
" 5....	70	526	6.8	25	3	158
" 6....	59	543	8.7	31	1	413
" 7....	63	801	5.2	34	..	446
" 8....	73	476	4.1	32	3	146
" 9....	40	154	14.3	28	2	99
" 10....	41	218	9.9	33	4	96
" 11....	80	531	8.8	23	2	224
" 12....	57	679	8.8	28	2	190
" 13....	133	606	5.4	38	..	174
" 14....	68	323	7.8	32	2	155
" 15....	85	500	3.1	38	7	177
" 16....	46	344	7.1	32	2	94
" 17....	68	859	8.1	33	1	255
" 18....	44	379	12.8	32	..	118
" 19....	67	400	5.9	29	4	162
" 20....	74	209	11.0	36	..	144
" 21....	61	407	10.1	34	2	276
" 22....	153	590	3.3	25	4	159
" 23....	87	699	6.7	34	4	455
" 24....	55	420	9.3	28	4	131
" 25....	117	782	5.2	26	3	337
" 26....	86	724	4.7	30	1	379
" 27....	54	326	11.5	41	9	126
" 28....	80	424	7.2	23	17	172
" 29....	92	827	3.8	35	1	572
" 30....	98	663	6.9	36	5	207
" 31....	111	630	4.7	34	2	333
" 32....	57	227	11.2	37	11	145
" 33....	137	669	7.4	21	3	527
" 34....	151	654	6.8	23	4	533

TABLE IVd. GROUP S

FINAL SCORES

	EASY OPPOSITES	HARD OPPOSITES	LOGICAL MEMORY	UNRELATED MEMORY		EBBINGHAUS TEST
				Correct	Errors	
S 1....	146	753	1.9	14	5	654
" 2....	130	748	1.2	18	6	510
" 3....	58	511	5.1	25	1	222
" 4....	67	415	7.5	21	1	283
" 5....	193	761	4.2	20	1	373
" 6....	80	615	11.2	31	1	105
" 7....	71	473	6.0	21	..	159
" 8....	136	646	3.1	16	6	315
" 9....	115	699	5.4	24	..	229
" 10....	137	634	3.6	24	1	305
" 11....	70	461	6.1	26	1	443
" 12....	51	316	8.8	21	1	180
" 13....	79	399	2.9	19	2	279
" 14....	107	381	2.7	19	1	240
" 15....	108	357	3.2	17	1	210
" 16....	120	427	2.7	19	..	288
" 17....	104	438	4.1	23	2	392
" 18....	288	589	1.3	18	2	525
" 19....	200	544	.6	18	2	505
" 20....	81	584	6.1	28	1	345
" 21....	205	556	2.5	18	..	319
" 22....	217	672	.2	12	..	399
" 23....	120	548	4.7	20	1	314
" 24....	49	517	6.	21	2	287
" 25....	254	705	.7	16	1	391
" 26....	136	301	7.	24	..	168
" 27....	134	789	1.3	16	1	493
" 28....	43	567	9.	35	1	192
" 29....	68	577	6.1	25	..	141

3. COMPARISON OF FINAL SCORES

TABLE V. COMPARISON OF FINAL SCORES OF FOUR GROUPS (C-D-E-S) ARRANGED IN ORDER OF MERIT

	EASY OPPOSITES					HARD OPPOSITES					LOGICAL MEMORY					UNRELATED MEMORY					EBBINGHAUS TEST					
	C		D		E	S	C		D		E	S	C		D		E	S	C		D		E	S		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	38	53	40	49	128	326	154	301	7.6	1.8	14.3	11.2	24	10	21	12	59	78	94	105	61	118	96	141		
2	38	56	41	51	135	358	209	316	8.2	2.0	12.8	9.0	27	15	23	14	65	131	99	159	65	138	118	168		
3	38	59	44	58	135	371	218	357	8.5	2.4	11.5	8.8	27	17	23	16	65	138	118	168	66	173	126	180		
4	39	65	46	67	136	403	227	381	8.5	2.5	11.2	7.5	27	17	23	16	66	173	126	180	67	178	131	192		
5	40	71	54	68	147	414	323	399	8.7	2.6	11.0	7.0	28	17	25	16	67	178	131	192	67	178	131	192		
6	41	72	55	70	152	422	326	415	9.0	2.8	10.1	6.1	29	18	25	17	67	178	131	192	69	184	144	210		
7	41	73	56	71	155	426	344	427	10.2	3.4	9.9	6.1	30	19	25	18	71	189	145	222	71	189	145	222		
8	43	74	57	79	162	433	379	438	10.2	3.4	9.3	6.1	30	19	25	18	75	204	146	229	75	204	146	229		
9	43	79	57	80	163	453	400	461	10.3	3.5	8.8	6.0	30	20	26	18	78	234	151	240	78	234	151	240		
10	43	82	59	81	165	455	407	473	10.4	3.6	8.8	6.0	31	20	28	18	79	240	155	279	79	240	155	279		
11	43	83	61	93	179	466	420	511	10.7	3.7	8.7	5.4	31	21	28	19	79	242	158	283	79	242	158	283		
12	45	86	63	104	180	499	424	517	10.9	3.8	8.4	5.1	31	21	28	19	88	242	158	283	88	242	158	283		
13	45	97	63	107	180	513	465	544	11.4	3.9	8.1	4.7	31	22	29	19	89	254	159	287	89	254	159	287		
14	45	99	67	108	190	524	476	548	11.8	4.4	7.8	4.2	31	22	29	29	93	278	162	288	93	278	162	288		
15	46	99	68	115	192	532	491	556	12.6	4.5	7.4	4.1	31	23	30	20	94	285	172	305	94	285	172	305		
16	46	114	68	120	204	560	500	567	12.7	5.0	7.2	3.6	31	24	31	21	97	292	174	314	97	292	174	314		
17	47	120	70	120	204	563	526	577	12.9	5.1	7.1	3.2	32	25	32	21	97	294	177	315	97	294	177	315		
18	47	120	73	122	221	569	531	584	13.1	5.3	6.9	3.1	33	25	32	21	98	313	190	319	98	313	190	319		
19	47	123	74	134	229	571	543	589	13.2	5.5	6.7	2.9	33	26	32	21	99	314	207	345	99	314	207	345		
20	47	125	80	136	231	580	590	615	13.6	5.6	6.8	2.7	33	26	32	23	100	350	224	373	100	350	224	373		
21	47	135	80	136	249	590	606	634	13.8	6.2	6.7	2.7	33	26	33	24	102	382	225	391	102	382	225	391		
22	49	138	80	137	255	592	630	646	14.1	6.4	6.6	2.5	33	29	33	24	102	398	255	392	102	398	255	392		
23	49	146	85	146	263	622	631	672	14.5	6.7	6.1	1.9	33	29	34	24	103	436	276	399	103	436	276	399		
24	49	154	86	193	267	686	654	699	14.6	7.3	5.9	1.3	35	29	34	25	104	443	292	443	104	443	292	443		
25	51	161	87	200	270	715	663	705	14.7	7.4	5.4	1.3	36	30	34	25	106	475	333	493	106	475	333	493		
26	51	165	92	205	272	722	669	748	15.0	7.5	5.2	1.2	36	31	34	26	107	476	337	505	107	476	337	505		
27	51	211	98	217	272	723	679	753	15.5	7.7	5.2	1.7	37	31	35	28	107	560	346	510	107	560	346	510		
28	54	222	111	254	278	795	699	761	15.5	10.5	4.7	6	37	32	36	31	122	583	379	525	122	583	379	525		
29	55	297	117	288	295	869	724	789	15.6	10.8	4.7	.2	39	33	36	35	125	724	413	654	125	724	413	654		
30	58	301	133	...	302	883	782	...	15.6	14.6	4.4	...	39	35	37	...	129	840	446	...	129	840	446	...		
31	58	...	133	...	312	...	801	...	15.8	...	4.1	...	40	...	38	...	133	...	455	...	133	...	455	...		
32	60	...	137	...	317	...	827	...	15.8	...	3.8	...	40	...	38	...	135	...	527	...	135	...	527	...		
33	60	...	151	...	317	...	859	...	16.7	...	3.3	...	40	...	38	...	142	...	533	...	142	...	533	...		
34	63	...	153	...	328	...	1079	...	16.8	...	3.1	...	40	...	41	...	148	...	572	...	148	...	572	...		
35	65	...	...	...	367	...	...	...	18.2	...	3.1	...	41	...	40	...	178	...	...	...	178	...	...	...
36	67	...	...	...	388	...	...	...	18.5	...	3.1	...	45	...	45	...	244	...	...	...	244	...	...	...

In Easy Opposites, the lower the score the better the rank.
 In Hard Opposites, the lower the score the better the rank.

In Logical Memory, the higher the score the better the rank.
 In Unrelated Memory, the higher the score the better the rank.
 In Ebbinghaus Test, the lower the score the better the rank.

PART III

RESULTS

(1) INTELLIGENCE TESTS

I. EASY OPPOSITES TEST

Comparing now the results attained by the four groups on this test, we have the facts of Table VI.

TABLE VIa
EASY OPPOSITES
COMPARISON OF THE FOUR GROUPS

	n = number of cases
Barnard College (C) Group.....	n = 36
Delinquent (D) Group.....	n = 30
Evening Settlement House (E) Group.....	n = 34
Servant girl (S) Group.....	n = 29

COMPARISON WITH C GROUP

% of D Group reaching or exceeding median of C Group = 0%
" " " " " 25%ile " " " = 3.3%
" " " " " 10%ile " " " = 10%
% of E " " " " " median " " " = 12% (.118)
" " " " " 25%ile " " " = 15% (.147)
" " " " " 10%ile " " " = 29% (.294)
% of S " " " " " median " " " = 0%
" " " " " 25%ile " " " = 7% (.069)
" " " " " 10%ile " " " = 10% (.103)

COMPARISON OF D AND E GROUPS

% of D Group reaching or exceeding median of E Group = 16 1/2%
" " " " " 25%ile " " " = 43 1/2%
" " " " " 10%ile " " " = 66 1/3%

23 1/2% of D Group were worse than the poorest of the E Group
12% of E Group were better than the best of the D Group

COMPARISON OF D AND S GROUPS

% of D Group reaching or exceeding median of S Group = 53 1/2%
" " " " " 25%ile " " " = 93%
" " " " " 10%ile " " " = 90%

6 1/2% of D Group were worse than the poorest of the S Group.
7% of S Group were better than the best of the D Group.

That is, if we compare Groups C and D, we find that no member of Group D reached the median score of Group C and

that 3.3%, or 1 person, in Group D, did as well on this test as the lowest 25% of the College Group, whereas 10% of Group D reached or exceeded the score obtained by the poorest 10% of Group C.

That members of Group E compare more favorably with Group C is seen by their record, for 12% of them reach or exceed the median of Group C, as well as by the number reaching or exceeding the 25 percentile and the 10 percentile.

Thus we see that Group C succeeds far better on this test than the other groups, that the overlapping of Groups C and D is slight and the test differentiates the two groups quite well, but the difference between the two is not much greater than that between Groups C and S, the only distinction being that one more member of Group S reaches the 25 percentile than in Group D, whereas Group E lies between the others.

Though 22½% of Group D have results poorer than the poorest record in Group E, and 12% of Group E are better than the best of Group D, yet the overlapping is considerable. More significant, however, is the great overlapping in Groups D and S; here, though, the upper and lower limits are more favorable for Group S, yet Group D on the whole does quite as well, for 53½% reach or exceed 50% of the members of Group S and 93% reach or exceed the record of 75% of Group S.

The groups as a whole are fairly comparable, and 28 out of 30 of our delinquent girls do no worse than some subject in Group S.

II. HARD OPPOSITES TESTS

The facts are shown in Table VIb. This test differentiates our groups somewhat better than the former; the difference between Group C and the three other groups is accentuated here, yet the general relationships remain much the same. Both Groups D and S are much lower in attainment than Group C and Group E approaches nearer the same standing.

But, on the other hand, the overlapping of Groups D and E is much greater here than in the Easy Opposites Tests. The members of Group E are less able to cope with this and do not succeed much better, in fact no better, than Group D, for while the median falls higher the 25 and 10 percentiles fall slightly lower. Though 15% of Group E surpass the best record

TABLE VIb
HARD OPPOSITES

COMPARISON OF THE FOUR GROUPS

% of D Group reaching or exceeding median of C Group =	0%
" " " " " " 25%ile " " " =	0%
" " " " " " 10%ile " " " =	3½%
% of E " " " " " median " " " =	9% (.088)
" " " " " " 25%ile " " " =	12% (.118)
" " " " " " 10%ile " " " =	15% (.148)
% of S " " " " " median " " " =	0%
" " " " " " 25%ile " " " =	0%
" " " " " " 10%ile " " " =	7% (.069)

COMPARISON OF D AND E GROUPS

% of D Group reaching or exceeding median of E Group =	46½%
" " " " " " 25%ile " " " =	76½%
" " " " " " 10%ile " " " =	93½%

0% of D Group were worse than the poorest of the E Group.

3% of E Group were worse than the poorest of the D Group (.034).
15% of E Group were better than the best of the D Group (.148).

COMPARISON OF D AND S GROUPS

% of D Group reaching or exceeding median of S Group =	50%
" " " " " " 25%ile " " " =	76½%
" " " " " " 10%ile " " " =	90%

10% of D Group were worse than the poorest of the S Group.

7% of S Group were better than the best of the D Group.

attained by any one in Group D, yet 3% of that same group do worse than the poorest record obtained in the delinquent group.

The close parallelism of Groups D and S is striking; the groups almost overlap each other exactly, though the upper limit reached by S is better and the lower is worse in the D group.

III. MEMORY OF WORDS TEST

The facts are shown in Tables VIc and VID. The results here are much more favorable for Group D; the lines of demarcation between the groups here are fainter. The record for Group D is far below that of Group C, and even below Group E, but it is better than for Group S.

If we notice the errors made as given in the table below, we find many more in Group D. These represent words given that did not appear in the lists. Just what this signifies, it is rather difficult to say. Possibly it shows less mental control on the part of Group D; associations evoked are not eliminated but given as though *bona fide* memory items.

TABLE VIc
MEMORY FOR UNRELATED WORDS

COMPARISON OF FOUR GROUPS

% of D Group reaching or exceeding median of C Group	=	61%
" " " " 25%ile " " "	=	20%
" " " " 10%ile " " "	=	30%
% of E " " " " median " " "	=	41% (.411)
" " " " 25%ile " " "	=	59% (.588)
" " " " 10%ile " " "	=	74% (.735)
% of S " " " " median " " "	=	31% (.034)
" " " " 25%ile " " "	=	7% (.069)
" " " " 10%ile " " "	=	10% (.103)

COMPARISON OF D AND E GROUPS

% of D Group reaching or exceeding median of C Group	=	10%
" " " " 25%ile " " "	=	30%
" " " " 10%ile " " "	=	53%

33½% of D Group were worse than poorest of E Group.
21% of E Group were better than best of D Group (.206).

COMPARISON OF D AND S GROUPS

% of D Group reaching or exceeding median of S Group	=	66½%
" " " " 25%ile " " "	=	83½%
" " " " 10%ile " " "	=	93½%

3½% of D Group were worse than poorest of S Group.
0% of S Group were better than best of D Group.

TABLE VIId
COMPARISON OF GROUPS
ERRORS IN UNRELATED MEMORY TEST
(Based on final score)

GROUP C		GROUP D		GROUP E		GROUP S	
No. of Errors	Freq.	No. of Errors	Freq.	No. of Errors	Freq.	No. of Errors	Freq.
1	11	1	3	1	6	1	15
2	8	2	7	2	7	2	6
3	7	3	3	3	4	3	1
4	2	4	5	4	6	5	1
		5	1	5	1	6	1
		6	2	7	1		
		8	1	9	1		
		9	1	11	1		
		12	2	17	1		
		16	1				
Av. C = .28		Av. D = 2.2		Av. E = 1.7		Av. S = .5	
Mode = 1		Mode = 2		Mode = 2		Mode = 1	
Med. = 2		Med. = 4		Med. = 3		Med. = 2	

IV. MEMORY OF PASSAGES TEST

The facts are shown in Table VIe. This test proves much more difficult than the Memory of Words Test; for here again the overlapping is slight but the relations between the different groups remain about the same. On the whole, Group D proves to be quite a little better than Group S, particularly as regards the lower 50% of the group.

TABLE VIe
MEMORY—LOGICAL PASSAGES

COMPARISON OF GROUPS C AND D

% of D Group	reaching or exceeding	median of C Group	=	3½%
" " "	" " "	25%ile " "	=	10%
" " "	" " "	10%ile " "	=	10%
" " "	" " "	poorest in " "	=	13½%
% of E	" " "	median of " "	=	3% (2½)
" " "	" " "	25%ile " "	=	15% (14½)
" " "	" " "	10%ile " "	=	33% (32½)
" " "	" " "	poorest in " "	=	41% (41½)
% of S	" " "	median of " "	=	0%
" " "	" " "	25%ile " "	=	3% (3½)
" " "	" " "	10%ile " "	=	10% (10½)
" " "	" " "	poorest in " "	=	10% (10½)

COMPARISON OF D AND E GROUPS

% of D Group	reaching or exceeding	median of E Group	=	23½%
" " "	" " "	25%ile " "	=	43½%
" " "	" " "	10%ile " "	=	60%
" " "	" " "	poorest in " "	=	76½%

COMPARISON OF D AND S GROUPS

% of D Group	reaching or exceeding	median of S Group	=	56½%
" " "	" " "	25%ile " "	=	90%
" " "	" " "	10%ile " "	=	100%

V. COMPLETION TEST

The facts are shown in Table VIIf. We find this test also difficult for the three groups, D, E and S. Though E does better than D measured by the standard as set by Group C, yet the difference is not so great, and compared with each other there is no great disparity shown, especially as regards the lower half of each group. Here again we find the ability of the members of Groups D and S fairly comparable.

TABLE VI
EBBINGHAUS COMPLETION TEST

COMPARISON OF GROUPS C AND D

% of D Group	reaching or exceeding	median of C Group	=	3½%
" " "	" " "	25%ile " " "	=	6½%
" " "	" " "	10%ile " " "	=	13½%
" " "	" " "	poorest in " " "	=	60%
% of E	" " "	median of " " "	=	6% (5½)
" " "	" " "	25%ile " " "	=	9% (8½)
" " "	" " "	10%ile " " "	=	24% (23½)
" " "	" " "	poorest in " " "	=	71% (70½)
% of S	" " "	median of " " "	=	0%
" " "	" " "	25%ile " " "	=	3% (3½)
" " "	" " "	10%ile " " "	=	3% (3½)

COMPARISON OF D AND E GROUPS

% of D Group	reaching or exceeding	median of E Group	=	20%
" " "	" " "	25%ile " " "	=	63½%
" " "	" " "	10%ile " " "	=	86½%
" " "	c " "	poorest in " " "	=	90%

COMPARISON OF D AND S GROUPS

% of D Group	reaching or exceeding	median of S Group	=	56½%
" " "	" " "	25%ile " " "	=	70%
" " "	" " "	10%ile " " "	=	86½%
" " "	" " "	poorest in " " "	=	93½%
" " "	better than	best " " "	=	3½%

If, then, we summarize the conditions regarding the intellectual status of the four groups as measured by these five tests, we find, as one would expect, that Group C excels by far the other groups; Group E ranks next in ability, and Groups D and S fall last. While in no test does Group D equal the record of Group E, yet in the Completion Test, which proved to be most difficult for Group E, the gap between is the slightest.

But, what is more to the point, we find that Group D not only proves as capable as Group S, but in some instances excels that group. This is true for the Easy Opposites, the Memory of Words (if we take into account only correct replies) and Memory of Passages; while in the two remaining tests the groups fall almost parallel.

Thus, though our delinquent girls are not as capable as their sisters, many of them from congested districts, who in other ways are proving themselves ambitious, yet they are no less equipped intellectually than others who are earning a livelihood

and caring for themselves without coming in conflict with the law at least. Whatever their mental status might be, measured by other means, the fact remains that there is no *necessary* correlation between their immoral or criminal tendencies and their intellectual ability and that others no more endowed than they are fighting life's battles without manifesting the same immoral or criminal tendencies.

(2) THE FERNALD ETHICAL DISCRIMINATION TEST

The scale of deeds used by Fernald is as follows:

- E. To take two or three apples from another man's orchard.
- P. To take a cent from a blind man's cup.
- I. To break windows for fun.
- C. To throw hot water on a cat or in any way to cause it to suffer needlessly.
- A. To break into a building to rob it.
- N. To take money as "graft" or "rake off" when you are a city or government official.
- T. To try to kill yourself.
- H. To ruin a nice girl and then leave her.
- U. To set fire to a house with people in it.
- S. To shoot to kill a man who runs away when you try to rob him.

Just what value the Ethical Discrimination Test has as an evidence of intellect pertaining to moral elements involved in various situations, is doubtful. It is difficult, in the first place, to know how seriously the problems in this test are weighed, how much real decision it represents. It is not, of course, a matter of native ability but to a large extent is the product of environmental conditions. Aside from that, can one judge of the subjects' present attitude toward the various misdemeanors regardless of why and how they have arrived at this point of view? Furthermore, in this study there is an added drawback; the deeds as here stated were planned to be used in testing boys and the situations therefore are not the most satisfactory as material to be used with girls. Yet the experiment was done for whatever it might reveal. The results are given in Table VII.

TABLE VII
FERNALD'S ETHICAL DISCRIMINATION TEST

Order	C GROUP (n = 35)										D GROUP (n = 27)										E GROUP (n = 33)										S GROUP (n = 22)									
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
E 1.	25	6	1	3	.	.	.	.	.	.	6	12	3	1	2	3	.	.	.	.	17	9	3	.	3	1	.	.	.	.	8	4	3	1	2	3	1	.	.	
P 2.	.	1	6	11	8	2	.	4	3	.	.	1	.	3	4	6	4	2	5	2	.	1	1	5	4	5	7	4	1	.	.	2	2	3	2	3	4	1	4	1
I 3.	8	23	4	14	3	5	1	3	.	.	1	.	.	11	14	5	1	.	1	1	.	.	.	4	6	1	1	4	1	1	3	1	.
C 4.	.	3	15	7	4	3	2	.	.	1	1	1	4	3	4	3	1	6	2	2	1	2	3	5	4	10	4	1	2	1	2	1	3	1	6	4	5	.	.	
A 5.	.	6	9	8	6	7	.	.	.	1	1	3	7	3	4	5	1	1	1	.	11	12	9	1	2	1	5	7	1	2	3	1	.	.
N 6.	.	2	2	6	9	7	4	2	3	.	2	2	4	5	2	2	3	2	3	2	1	4	4	8	4	4	3	3	2	.	4	4	4	3	4	1	.	2	.	
T 7.	2	2	1	.	3	8	5	3	6	5	2	3	3	3	2	4	3	2	3	3	1	2	1	.	2	4	4	3	10	6	1	2	2	2	1	.	4	7	3	.
H 8.	.	.	1	.	2	3	6	10	13	1	3	1	.	2	1	4	1	1	12	.	1	.	.	2	.	2	4	6	18	1	.	1	1	2	5	3	3	.		
U 9.	.	.	1	1	4	4	10	6	9	.	1	3	1	1	2	1	7	8	3	.	1	.	1	2	6	11	6	6	.	.	2	.	4	3	5	8	.			
S 10.	.	.	1	5	2	7	8	8	4	.	1	3	4	2	6	6	3	2	1	.	3	3	3	8	7	6	2	.	2	1	2	2	6	2	3	2	2	.		

TABLE VIII

OFFENSE P

C	Group ranks it 1-5 in 74% of cases	—5-10 in 26%
D	“ “ “ 1-5 “ 30% “ “ —5-10 “ 70%	
E	“ “ “ 1-5 “ 48% “ “ —5-10 “ 52%	
S	“ “ “ 1-5 “ 41% “ “ —5-10 “ 59%	

OFFENSE C

C	Group ranks it 1-5 in 83% of cases	—5-10 in 17%
D	“ “ “ 1-5 “ 49% “ “ —5-10 “ 51%	
E	“ “ “ 1-5 “ 45% “ “ —5-10 “ 55%	
S	“ “ “ 1-5 “ 58% “ “ —5-10 “ 42%	

OFFENSE N

C	Group ranks it 1-5 in 29% of cases	—5-10 in 71%
D	“ “ “ 1-5 “ 67% “ “ —5-10 “ 33%	
E	“ “ “ 1-5 “ 63% “ “ —5-10 “ 37%	
S	“ “ “ 1-5 “ 87% “ “ —5-10 “ 13%	

OFFENSE T U S

C	Group ranks it 1-5 in 24% of cases	— in 6% — in 17%
D	“ “ “ 1-5 “ 49% “ “ — “ 23% — “ 30%	
E	“ “ “ 1-5 “ 18% “ “ — “ 6% — “ 21%	
S	“ “ “ 1-5 “ 31% “ “ — “ 9% — “ 31%	

OFFENSE H

	C Group	D Group	E Group	S Group
Ranked as 1-3.....	0%	19%	3%	9%
4 and 5.....	3%	8%	6%	5%
5-10.....	97%	73%	91%	86%
8-10.....	82%	52%	84%	73%

As regards a number of the actions represented in this test, there is little difference to be found in the four groups.

If, however, we compare "P," we notice that though it is ranked as between 1 and 5 by 75% of Group C, yet it is ranked as between 5 and 10 by 70% of Group D. Noting the rankings given by Groups E and S, we find both agree more nearly with Group C than does Group D, but the divergence is still great. The deed is considered a graver injury by Groups D, S and E than by Group C, all three of the former placing it as 1-5 in less than 50% of the cases.

So, too, "C" is ranked as between 1 and 5 by 83% of Group C and is so placed by only 49% of Group D, though it is placed as between 1 and 5 by 45% of Group E and by 58% of Group S.

On the other hand, offense "N" is ranked as between 1 and 5 by 29% of Group C but is so placed by 67% of Group D, by 63% of Group E and by 87% of Group S. To the latter this offense does not seem serious.

Offense "H" is ranked 8 to 10 by 82% of Group C as opposed to 52% of Group D, while it is so placed by 84% of Group E and 73% of Group S. Though the judgment of Groups D and S is more nearly alike than any two groups, yet the judgment of Groups C, E and S is not so greatly different in regard to this deed, and Group D stands rather apart from the others.

Offense "S" is ranked by Group D the same as offense "P," if we divide the ranking into two groups, 1 to 5 and 5 to 10; here the judgment of Groups D and S is alike, though in the case of the latter, the act is regarded as slightly more serious than offense "P."

If one may generalize at all from this test, it would seem that the attitude of Group D towards persons and animals is quite different from that of Group C. They magnify the injury done a dumb animal; indeed, many of them in performing the test expressly stated that because it was an unfair advantage to take of an animal that can not speak they ranked it as extremely bad. Again it would seem that the cruelty which appeals to their emotions as in "P" outweighs the subtler injuries as in "N" and even in "S."

As regards Group E, the more serious offenses—T, H, U, S—are ranked very much the same by them as by Group C. Groups D and S judge more nearly alike except as regards offenses N, H, and U, where the discrepancy is considerable.

(3) ADAPTED COMPLETION TEST

In the Adapted Completion Test the purpose, as has been previously stated, was to determine whether one could discover, by means of a test, the intelligence of a subject regarding the moral element involved in a definite situation. It was not hoped to determine in any way what the subject's actual behavior in real life would be, but it was thought that, should one discover by means of a test that no knowledge or appreciation of the moral element was present in a given case, it might prove a valuable bit of information in the understanding of the subject's problems and difficulties. It was hoped to use material which would embody ideas regarding theft, deceit, display, vanity, cruelty, sex excitement and laziness; but in a number of instances the blanks did not prove successful. In some cases the point was not clearly enough stated to make the judgments expressed

clear; in others the situation was too simple, while on the other hand in one or two instances it was too subtle. A number of the instances used proved to be too little related to the real experiences and problems of the delinquents. These unsuccessful ones were dropped entirely and not scored. On the other hand, eight of the incidents used show some points at least of significance. The difficulty is that it is only after having actually worked with these girls for a considerable length of time that one realizes their problems sufficiently to carry on successfully a test of this sort, and, had time permitted, other more valuable material might have been substituted so that the method would have had a better trial in order to prove its value or its uselessness.

The blanks used were as follows: (The unsuccessful as well as the innocent passages are not given).

PASSAGE I

1. Mary liked pretty clothes very_____. She_____ a man who offered to give her a new suit if she would go out with him. She was_____ to do this and_____ to go in this way to the theatre. That was_____.

PASSAGE II

2. A_____ was very hungry. He passed a_____ with food outside and wanted_____. He_____ no money but he_____ rather than be_____. A girl saw him and thought him_____.

PASSAGE III

3. Mary had gotten a_____ good position. She could earn a good living if_____ worked steadily. She did not_____ working hard and so she_____ her position. Was this what she deserved?

PASSAGE IV

4. A girl was given 35 cents with which to_____ some coffee. She_____ it for 25 cents and took it_____. She told her mother_____ about it and_____ the change. Don't you think she was_____.

PASSAGE V

5. Two girls were waiting_____ a street corner for a car. A crowd of men_____ standing near them. The girls knew the men were talking about them and watching them. So the girls began to_____. This showed they_____.

PASSAGE VI

6. Mary's mother_____ her not to go with John. One day she_____ out saying she was going to_____ a friend. She really met John. She said to herself, "It really is_____ and so I told_____. That was_____.

PASSAGE VII

7. Jane was at a _____ show one night. A man sitting next _____ her, spoke to her several times. When she got up to go home he followed her. Jane _____ and so showed that she _____.

PASSAGE VIII

8. A girl went into a _____ to buy a hat. The felt hats on one counter were _____ \$1.75 and the velvet hats on another counter _____ marked \$2.48. One velvet hat _____ by mistake with the felt hats that cost \$1.75. So she _____ that one. Wasn't she _____?

Comparing the four groups for general intelligence as shown in the moral judgment test, we find the following table of frequencies:

TABLE IX

	FREQUENCY	SCORE
GROUP C:	3	5.
	11	4.9
	16	4.8
	4	4.7
	1	4.6
	1	4.5
GROUP D:	4	4.8
	1	4.7
	2	4.6
	4	4.5
	2	4.4
	2	4.3
	1	4.1
	3	4.
	1	3.8
	1	3.7
	1	3.6
	1	3.4
	4	3.3
	1	3.1
	1	2.4
	1	1.4
GROUP E:	1	4.9
	4	4.8
	4	4.7
	3	4.6
	4	4.5
	3	4.4
	3	4.3
	5	4.2
	1	4.1
	1	3.9
	1	3.8
	1	3.7
	1	3.5
	1	3.

TABLE IX—continued

GROUP S:	FREQUENCY	SCORE
	2	4.8
	3	4.7
	1	4.6
	4	4.4
	1	4.3
	1	4.2
	1	4.1
	2	4.0
	2	3.9
	1	3.8
	1	3.3
	2	3.2
	1	3.
	1	2.9
	2	2.7
	1	2.5

From this table it is seen that:

13½%	of Group D	reach or exceed the median of Group C
13½%	" " "	25%ile "
16½%	" " "	10%ile "
36½%	" " "	poorest "
15 %	" E	median "
15 %	" "	25%ile "
27 %	" "	10%ile "
48½%	" "	poorest "
11½%	" S	median "
11½%	" "	25%ile "
15½%	" "	10%ile "
31 %	" "	poorest "

Though an effort was made to have the passages here as simple as possible, yet they proved difficult for many of Groups D, E and S. Of course it must be taken into account that the passages were extremely easy for Group C; except for carelessness, undoubtedly all the members of that group could have attained a perfect score.

Still it will be readily seen that some of these passages, simple though they were thought to be, would be difficult to score for moral judgment. In the eight finally used for this purpose the score for general intelligence is somewhat better.

In Group C the range is still 4.5 to 5, but the median and mode are 5; in Group D 80% reach a score of 4 or over. The general distribution is shown below:

TABLE X

	FREQUENCY	SCORE
GROUP C:	21	5.
	7	4.9
	1	4.8
	4	4.75
	1	4.7
	2	4.5
GROUP D:	4	5.
	3	4.75
	4	4.5
	3	4.4
	4	4.3
	4	4.25
	1	4.1
	1	4.
	1	3.8
	1	3.5
	2	3.4
	1	3.
	1	2.25
GROUP E:	4	5.
	2	4.9
	7	4.8
	4	4.7
	1	4.6
	2	4.5
	2	4.4
	2	4.3
	1	4.2
	1	4.1
	1	3.9
	1	3.8
	1	3.4
	1	3.2
	1	3.0
	1	2.9
	1	2.5
	..	
GROUP S:	3	4.8
	1	4.7
	1	4.6
	3	4.5
	2	4.4
	3	4.3
	3	4.2
	4	4.
	1	3.6
	1	3.4
	2	3.3
	1	3.2
	1	3.

Since 80% of Group D receive a score of 80% or over for general ability to manage the test, and almost the same percentage of Group E prove as capable, while 77% of Group S

attain a score as good, it was felt that the passages were filled out well enough to estimate them for moral judgment.

Rather than score the replies on a scale, say, of 0 to 5, it was believed the significance of the inserted words would best be shown by enumerating the replies and endeavoring to summarize them.

In Passage I it is seen that the only significant blanks are the last three; the others permit of no alternatives and require no judgment. Group C filled the last two blanks as follows:

" She was.....to go, etc. That was....."	
3 anxious.....	wicked
3 afraid.....	right
8 glad.....	{ wrong (4) awful (2) foolish (2)
5 tempted.....	{ wrong (3) sad (1) foolish (1)
6 willing.....	{ bad (4) unusual (1) indiscreet (1)
4 unwilling.....	{ her decision (1) honest (1) right (1)
2 persuaded.....	{ hard (1) foolish (1) { primrose path to devil (1)

n=31

All these show an appreciation of the situation with the exception of one where the judgment is obscure (unwilling-hard) and one where no judgment is rendered (unwilling-her decision).

In Group D the terms used varied much more widely, yet we find the filled blanks falling into two groups. First:

5 afraid.....	{ right (3) wise (1) sensible (1)
4 going.....	{ bad (2) wrong (2) not right (1)
2 glad.....	wrong
1 anxious.....	silly
1 delighted.....	not right
2 persuaded.....	{ foolish (1) bad (1)
1 in humor.....	wrong
1 told.....	wrong
1 wishing.....	wrong
1 willing.....	not right

n=19

These seem in no wise to differ from the terms used by Group C; the judgments are certainly comparable and indicate an equal appreciation of the moral element involved. The second group of replies is as follows:

2 dressed.....	{ happy (1) all right (1) all right (2)
5 glad.....	{ surprising (1) (why so nice ?) smart (1) simply fine (1)
1 decided.....	pleasure
1 willing.....	pleasure
1 told.....	bad policy
1 wanted.....	all

n=11

Of these 11, the last two are doubtful, the one expressing no judgment, the other being not clear. The remaining nine, or 30%, show little discrimination of ethical values and, since all seemed perfectly sincere and naive in giving the words to be written down, they seem to have expressed their real judgment regarding the situation. It seems clear that the deed here mentioned means nothing wrong to them; they see in it no particular danger or wrong doing.

Group E filled the blanks as follows:

7 willing.....	{ result of wanting to dress beyond means (1) wrong (4) wicked (1) bad (1)
3 going.....	{ wrong (1) foolish (1) temptation (1)
2 afraid.....	good (1) right (1)
1 glad.....	wrong
1 anxious.....	wrong
1 reluctant.....	right
1 eager.....	a mistake
1 unwilling.....	sensible
1 displeased.....	right
1 deciding.....	wrong
1 going.....	see
1 pleased.....	her way
1 glad.....	the end
1 afraid.....	all
3 anxious.....	{ right (1) luck (1) imposing on good nature (1)

n=26

Here we find the last three, or 13.6%, of the 26 cases showing lack of moral perception and the four immediately preceding evading the issue by forming no judgment.

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In Group S we find—

5 willing.....	wrong (3) foolish (1) not good (1)
4 afraid.....	right (3) wise (1)
3 anxious.....	foolish (1) not right (1) ignorant (1)
1 pleased.....	not right
2 glad...	not sensible (1) wrong (1)
1 delighted.....	wrong
1 satisfied.....	naughty
3 going.....	not wise (1) awful (1) bad (1)
1 anxious.....	a pleasure
1 pleased.....	a pleasure
1 going.....	nice
1 asked.....	nice
2 willing.....	fine (1) done (1)

n=26

The last reply shows no judgment; the five preceding, or 19%, show poor moral judgment.

That is, comparing the four groups, we find poor moral perception in Group C, 0%; in Group E, 13.6%; in Group S, 19%; in Group D, 30%.

Passage II involves the idea of theft. The significant blanks—again the last three—are filled in only a few different ways by all the groups.

The results are as follows:

GROUP C

" But he.....rather than be..... A girl thought him....."	
11 stole..... starved.....	{thief bad
14 starved..... a thief.....	{good honest
1 starved..... hungry.....	stupid
9 starved..... hungry.....	{no judgment beggar tramp

n=35

GROUP D

12 stole..... starved.....	{thief bad
8 starved..... a thief.....	{good honest
3 stole..... hungry.....	right
3 asked..... stealing.....	{honest hungry tramp

n=26

GROUP E

3 stole.....	hungry.....	{	bad
			wrong
13 starved.....	steal.....	{	thief
	be a beggar.....		pitiful
2 went hungry.....	be dishonest.....	{	honest
1 hungered.....	thief.....		noble, good
1 asked.....	hungry.....	{	brave, model of manhood
1 died.....	a thief.....		good
2 walked away.....	be dishonest.....	{	nice
1 asked.....	hungry.....		poor
1 begged.....	starve.....	{	poor, hungry
1 starved.....	a thief.....		rude
			foolish

n=26

GROUP S

13 starved.....	steal.....	right, good
	mean.....	a thief, queer
8 stole.....	hungry.....	thief
2 went hungry.....	be dishonest.....	good, nice
1 asked.....	be hungry.....	right
1 stole.....	hungry.....	foolish

n=25

No one in Groups C or E considered the stealing right, though one in each group considered it as stupid not to commit it rather than be hungry; whereas three subjects in Group D feel such an act to be justifiable under the circumstances. But, on the other hand, 21 out of 26, or nearly 81%, in Group D form a judgment that is the same as that of 25 out of 35, or 71%, in Group C. From this we might conclude that the judgment in the two groups is not so greatly different. Here only three subjects, or 11½%, differ from Group C as compared with 30% in the Passage above, while Groups C, E and S are uniform in their judgment of the situation. In Group S two judgments are doubtful, one regards the fact of starving as foolish, but none regards stealing as justified.

The next Passage, number III, meant to test the attitude towards industry, is not particularly successful for the purpose; the situation is almost too simple. Yet it shows some difference in the judgment of the groups, as is seen in the filling of the three following blanks:

GROUP C

"She did not.....working hard and so she.....her position. Deserved?"

28 like.....	lost.....	yes
6 mind.....	held.....	yes

n=34

GROUP D

17 like.....	lost.....	yes
2 mind.....	held.....	yes
6 like.....	lost.....	no
4 no judgment expressed.		

n=29

GROUP E

22 like.....	lost.....	yes
5 mind.....	held.....	yes
5 believe in.....	lost.....	yes
1 like.....	lost.....	no

n=33

GROUP S

18 like.....	lost.....	yes
3 mind.....	held.....	yes
1 want.....	left.....	no
1 like.....	took it easy.....	yes
2 like.....	lost.....	no

n=25

That is, 20 $\frac{1}{3}$ % of Group D feel that dismissal because of not working is unjustifiable, whereas this is true of no one in Group C. From the remarks that accompanied the expression of the sentiment on the part of several of these subjects, the experimenter feels confident that they meant what they said, for they expressed themselves in no uncertain terms. Their attitude seemed different from the other 79 $\frac{2}{3}$ % of the group. In Group E, one subject, or 3% of the group, agreed with the 20 $\frac{1}{3}$ % of Group D, as did 8% of Group S. In the latter group two judgments are doubtful.

The last two blanks in Passage IV were filled as follows:

GROUP C

"And.....the change. Wasn't she.....?"

15 kept.....	wrong (bad-dishonest-thief)
17 returned.....	good (honest-right)
1 returned.....	generous
1 returned.....	saving
1 hid.....	dishonest

n=35

GROUP D

7 kept.....	wrong (bad-mean)
1 kept.....	rude
12 returned.....	good (right-honest-happy)
1 told about.....	correct
1 10c. change.....	bright ("because she got a bargain")
1 wanted.....	foolish
1 lost.....	bad
1	honest
1 kept.....	smart
1 spent.....	wise
3 kept.....	bright

n=30

GROUP E

15 gave.....	good (honest, right)
6 returned.....	good (honest, right)
11 kept.....	wrong (dishonest, bad, wicked, untrustworthy)

n=32

GROUP S

13 gave.....	good (right, honest)
9 kept.....	wrong (bad, untrue)
2 kept.....	good
1 took.....	smart

n=25

In several instances in Groups D and S one does not feel sure that the subjects may have said just what they intended or they may have misunderstood the sentence read and seen, as for example in the reply, "She kept the change. Wasn't she honest?" Those who answered that such action was right or wise or smart probably meant that. Counting the doubtful case, we should have in Group D 20% of the group showing no moral judgment, without it 16 $\frac{2}{3}$ %; and in Group S, 12%, counting the doubtful cases, and 4% without them.

The replies in Passage V are difficult to summarize, the blanks permit of such a variety of words being inserted. Though in the first of the two significant blanks but seven actions were suggested in Group C and 10 in Group D, yet the number of judgments expressed in the second blank varied much more widely. (The verbs inserted in the second blank are omitted.)

GROUP C

" So the girls began to.....	This showed they....."
14 smile.....	{ flirts (2) common (1) silly (1) not wise (3) no training (1) pleased (1) self conscious (3) to attract attention (1) dangerous type (1) ladies (2) annoyed (3) refined (1) modest (1) nice (1) good (2) not flirts (1) well brought up (1) didn't want attention (1) didn't want to be spoken to (1)
16 walk away.....	
2 talk.....	vain
1 turn their backs.....	sensible
1 giggle.....	silly
1 run.....	proud

n=35

GROUP D

4 smile.....	knew (2) ignorant (1) bad (1)
4 flirt.....	bad (2) fresh (2)
14 walk away.....	{ respectable (4) sense (1) nice (2) didn't like it (3) pride (1) annoyed (1) didn't want to be (conspicuous (1) didn't like men (1)
1 talked to them.....	didn't care
1 shout.....	afraid
1 fidget.....	nervous
1 cry.....	feared
1 to be frightened.....	sensible
1 hit them.....	didn't like it
1 get nervous.....	wanted their car

n=29

GROUP E

16 walk away.....	{ sensible, good, respectable, annoyed, etc.
3 laugh.....	conscious, foolish, vulgar
3 walk.....	ladies, didn't like it, knew
2 giggle.....	foolish
1 talk.....	disliked it
1 talk softly.....	refined
1 smile.....	weak
1 run.....	frightened
1 get frightened.....	didn't like attention
2 move on.....	wise, afraid

n=31

GROUP S

4 laugh.....	silly, flirting
1 get angry.....	nice
1 move.....	good
1 hurry.....	didn't like it
1 got cross.....	disliked it
1 talk.....	friends
1 cry.....	afraid
1 run.....	afraid
1 go.....	afraid
13 walk away.....	{ good, sensible, indignant, etc. knew something (1)

n=25

Here, though it is difficult to state briefly differences in moral judgment, it is interesting to note the manner in which the situation is viewed by the different groups. To Group C it is apparently a rather harmless situation to which one reacts in practically one of two ways—either by encouragement or by discouragement. But to many of Group D it is the occasion of alarm and seems to signify something more than is indicated on the surface. "They knew," "they were ignorant," "they were afraid," "were nervous," "they feared," are all responses very different from those given by any member of Group C. In Group E we find in five cases likewise the terms, "were afraid," "they knew." And of the 25 subjects in Group S, three use the word "afraid" and one "knew something."

Passage VI proved too difficult for many of Group D; the force of the situation was often not grasped. The point desired was to see if it were recognized that by using the word "friend" the girl in the story was hiding a falsehood by a subterfuge.

Though the blanks vary considerably, yet except for four who expressed no judgment in their inserted words, all members of Group C indicated that Mary had lied and that it was wrong. In some instances Mary herself recognized the untruth and the judgment of the subject corroborated this view; in other instances Mary did not, but the subject decided the action was wrong or was moral quibbling. The blanks were filled as follows:

GROUP C

"And so I told..... That was....."

8 a lie.....	wrong
1 a lie.....	depressing
8 the truth.....	a lie
2 the truth.....	deceitful
1 the truth.....	moral quibbling
1 the truth.....	dishonest
2 the truth.....	wrong
2 all right.....	wrong
2 what was wrong.....	true
4 no judgment	

n=31

In Group D, however, only nine perceived the true situation, six showed they did not, and nine subjects showed such confusion that the moral value of their replies could not be determined. Thus:

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2 truth.....	wrong
1 nothing disobedient.....	wrong
1 lie.....	dreadful
1 the wrong.....	true
1 what was wrong.....	not honest
1 what was wrong.....	a lie
1 what was wrong.....	against her mother's wish
1 what was deceitful.....	true

n = 9

1 truth.....	truth
1 truth.....	all right
3 truth.....	so
1 mother.....	all right, for pleasure

n = 6

6 no judgment
9 confused

The confused ones were similar to the reply of one subject who said, "It really is a shame and so I told mother. That was a lie." Here and in the other eight the two statements are either not true as regards the preceding part of the situation, or the parts contradict each other. But the six cases, 20% of the entire group or 25% of the 24 subjects who filled the blanks in any manner, certainly show no realization of the falsehood.

In Group E four subjects found the passage too difficult to attempt and left it entirely blank; the remaining subjects inserted the following words:

4 mother.....	deceitful, right, a lie, all
8 what was wrong.....	so, truth, right
1 what was wicked.....	so
2 a lie.....	wrong, mean and low
5 truth.....	bad, lie, false
1 not right.....	wrong, true
1 the right.....	wrong
1 him.....	untruth
1 truth.....	so
1 mother.....	so

n = 25

Three of these are words which made the significance doubtful but two, or 7% of all the group, or 8% of those who filled the blanks, fail to see the falsity of the subterfuge.

The words inserted by 23 subjects in Group S, three having left the entire passage unfilled, are:—

6 lie.....	wrong, the truth
5 mother.....	bad, untrue
2 truth.....	wrong, falsehood
2 a lie.....	
3 mother.....	my friend, John, all
2 no lie.....	all right, true
1 a lie.....	better
2 truth.....	so

n=23

Here, besides the three passages left blank, five others show no judgment and five no perception of falsehood—that is, 19% of the entire group or 21 $\frac{1}{4}$ % of the 23 subjects who responded in this passage. Here Groups D and S are almost equal in per cent of those showing poor moral judgment.

Passage VII permitted of a great variety of action indeed. Jane could do a great many things as the insertions show. However, except for one subject, no one in Group C had Jane behave in any manner other than most properly, and the one exception regarded the action as "wicked." Just what she did varied from "ignoring" her neighbor to "sticking him with a hat pin." A few characteristic replies are selected which are typical of all the remainder.

GROUP C

"Jane.....	and so showed that she....."
was disgusted.....	.....was displeased
paid no attention.....	.....was annoyed
called police.....	.....a lady
ran.....	.....afraid
stuck with hatpin.....	.....plucky
was proud and dignified.....	.....had good judgment

In Group D the replies of 21 subjects are comparable to these as the following typical examples show:

was displeased.....	.....didn't like it
was indignant.....	.....a lady
called an officer.....	.....a lady
hurried.....	.....was annoyed

But the replies of seven subjects are quite different:

1 was amazed at his actions.....	.....appreciated his kindness
1 got acquainted.....	.....she liked him
1 must have been pretty.....	.....was all right
1 said she liked his company.....	.....liked him
1 came over to him.....	.....was bashful
1 was excited.....	.....wasn't afraid
1 tried to be a good girl.....	.....she tried, at least

n=7

These, including the last rather pathetic one, show lack of appreciation of the situation and surely help to understand somewhat better the make-up of the delinquent subject—her intelligence in regard to one social situation at least. In this case we have 25% of the group included.

In Group E, the insertions, very similar to those of Group C, are as follows:

turned away.....	.....was lady
ignored him.....	.....was lady
very angry.....	.....disliked it
slapped his face.....	.....not to be fooled with

In all cases Jane discouraged her neighbor and none of the replies were comparable to the seven especially mentioned in Group D.

The same is true of the fourth group, Group S; all of the subjects show an understanding of the situation, and in no case is the action of the neighbor countenanced or considered all right.

Here again typical replies are:—

disapproved.....	.....didn't like it
ran home.....	.....was scared
hit with umbrella.....	.....was sensible
had him arrested.....	.....good

The next Passage, number VIII, proved a very interesting one, for though the groups vary greatly, yet more of Group C agree with those who fail to have a high standard of ethical values in Group D than in any one passage. It is only necessary to give details for the last blank, for in all instances the girl was made to buy the hat, the blank being filled, "So she took that one."

GROUP C

"Wasn't she_____."

4 clever
2 lucky
2 sly
1 sensible
1 right
25 wrong, i.e.,
5 bad
3 a cheat
10 dishonest
1 a crook
1 terrible
4 deceitful
1 horrid

n=35

GROUP D

11 smart
3 right
1 pleased
1 sensible
9 lucky
5 wrong, i.e.,
 1 a cheat
 1 stealing
 1 wrong
 1 dishonest
 1 mean

n=30

GROUP E

3 lucky
3 clever
2 wise
1 smart
6 right
15 wrong
 7 dishonest
 2 wrong
 2 deceitful
 1 a thief
 1 cheating the company
 1 unfair
 1 untruthful

n=30

GROUP S

5 right
6 lucky
3 wise
1 bright
6 smart
1 happy
1 clever
1 glad
2 wrong
 1 mean
 1 dishonest

n=26

That is, 28½% of Group C regard this action as justifiable as against 71½% who regard it as wrong. In Group D, however, 83½% regard it as justifiable and 16½% as wrong. In Group E in 50% regard it as justifiable, the other 50% as wrong; while Group S only about 7½% regard it as at all dishonest as opposed to 92½% who believe it to be entirely honest. Thus we see the groups vary widely in their judgment but a greater per cent of Group C shows lower ethical standard here than in any of the situations.

This fact, however, makes the experimenter view the type of test rather favorably—it speaks well for the test. For in real

life, this situation would probably be regarded by many a non-delinquent as perfectly "all right" on the plea that the fault lay with the proprietor of the store or his clerks rather than with the customer.

In the table given below, the general results in the eight passages are summarized.

TABLE XI

PASSAGE I. Lack of moral judgment shown by:

0.	%	Group C
13.6	%	" E
19.	%	" S
30.	%	" D

PASSAGE II. Stealing justified by:

0.	%	Group C
0.	%	" E
0.	%	" S
20 $\frac{1}{2}$	%	" D

PASSAGE III. Lack of industry countenanced by:

0.	%	Group C
3.	%	" E
8.	%	" S
20 $\frac{1}{2}$	%	" D

PASSAGE IV. Dishonesty approved of by:

0.	%	Group C
0.	%	" E
4.	%	(possibly 12%) Group S
16 $\frac{1}{2}$	%	(possibly 20%) " D

PASSAGE V. Notice by opposite sex regarded as dangerous by:

0.	%	Group C
16 $\frac{1}{2}$	%	" E
12.	%	" D
27 $\frac{1}{2}$	%	" S

PASSAGE VI. A subterfuge regarded as legitimate and not a lie by:

0.	%	Group C
8.	%	" E
21 $\frac{1}{2}$	%	" S
25.	%	" D

PASSAGE VII. Unwarranted familiarity on the part of a stranger countenanced by:

0.	%	Group C
0.	%	" E
0.	%	" S
25.	%	" D

PASSAGE VIII. Taking advantage of known mistake justified by:

28 $\frac{1}{2}$	%	Group C
50.	%	" E
92 $\frac{1}{2}$	%	" S
83 $\frac{1}{2}$	%	" D

Whatever criticisms can be made as to the moral judgment test, one would hesitate to say that nothing is gained by it. For, on the whole, this test does give definite indications of individual differences in the intelligence of subjects in regard to ethical elements. The impressions of the experimenter in actually conducting the test were often very vivid. Had the situations been more carefully planned and the alternatives more skillfully devised the results would probably have been more satisfactory. The method itself seems capable of improvement and its use promises to prove of considerable value.

Even in its present unsatisfactory form, certain differences are shown between some members of Group D and other members in that same group, as well as between the former and the other groups. This is as one would expect; for surely not all delinquents are lacking in intelligence with regard to right and wrong whatever their behavior might indicate. Nor need they show equally poor intelligence in regard to all ethical elements.

The fact that no member of Group C would consider accepting the offer made in Passage I or, at least, that such acceptance was recognized as unwise, wrong or unjustifiable, but that, on the contrary, certain members of the other groups disagree with this, is indicative of different judgment in regard to a situation that might actually arise in the lives of some of these subjects. That it not only might, but does, is shown by the fact that the test blank was based on an incident narrated by a member of Group D. The consequences following from the judgment of the 13.6% of Group E, of the 19% of Group S and of the 30% of Group D might vary according to other characteristics possessed by the subjects, but the point of view in regard to the situation yet enables one to form a clearer opinion regarding the mental make-up of the individual.

Just how one would act were he placed in the situation depicted in Passage II is not, of course, necessarily shown by the replies given by the individual subjects. How one views the action on the part of another is a different matter. Those who stated it as their belief that to steal when one is hungry is "right," show thereby a definite attitude as regards this situation, which, however they themselves might justify the behavior, might, nevertheless, readily lead to conflict with the law.

Simple as is the situation presented in Passage III, we find

quite a difference in the replies given. Is not the fact that, in the test, lack of industry is countenanced $2\frac{1}{2}$ times as often by Group D as by Group S, and nearly 7 times as often as by Group E, not to mention the still greater variance in judgment on the part of Group C, of some significance? Some writers place among the causes which lead to entering lives of immorality, the plea that it is "easier" than occupations that are "hard" and tedious, though honest. Perhaps, then, this blank may indicate some trait of character, at least, found in members of the different groups.

In Passage IV the actions of the members of the different groups could not be foretold, of course, by the judgments rendered in the blanks, for one may know a deed to be wrong and still perform it. Again, the 20 $\frac{2}{3}\%$ of Group D may have been franker and more honest in expressing a conviction held also by some members of the other groups, and so it is possible that it may not represent their real intelligence regarding the act. That is, they may have the accepted standard of honesty and yet regard the deed as justified or wise or sensible, whereas members of the other groups may express the accepted standard and in their own minds regard the action of dishonesty here as justifiable in their own if not in another's behavior.

Passage V requires little more discussion than has been given in connection with the detailed replies enumerated. Whether the differences in attitude are accounted for by the past experiences of the subjects, by differences in environmental conditions in which the subjects live or have lived, is difficult to know.

If one felt sure that the significance of the situation presented in Passage VI was recognized equally well by all the subjects in the four groups, one would be able to state that the ethical standard regarding truth telling is not the same for all members of the groups and that it is lowest for Group D. But, on the other hand, the passage was left unanswered or answered in so confused a manner by a large per cent of Groups D and S, of the former especially, that the per cents are based on a comparatively small part of those groups.

Perhaps Passage VII proved more valuable than any other as far as serving to give an insight into the intelligence with which our groups would meet a situation of a kind very possible

to be encountered by many of them. The blanks permitted of such freedom in reply, so little was suggested by the setting as regards response in behavior, that they could state what they actually believed to be the best action to pursue. The results here are almost startling—the difference between Group D and the three other groups is so striking. That 75% of group D might in real life behave in a manner so different from the other 25% is true, yet to realize that these seven girls would possibly react in this manner through lack of intelligent realization of the situation might prove a help in protecting them, certainly at least in judging them.

Compared with this passage, the next, Passage VIII, is interesting. Instead of finding Group D standing apart, as it were, we see here much more uniformity in judgment, Group S falling below Group D as regards the standard of honesty; this is the only instance where this is true. Throughout the other seven passages Group D as a whole shows less intelligence in regard to moral elements. Yet in no instance, save in Passage VIII, do we find as many as one-third of the group differing from Group C where the conventional standard is upheld by all except in the last passage. The majority of them show as much understanding of the situations presented and the same standard in judging right and wrong.

But if the test serves to find those among the whole delinquent group whose apperceptive power, or whose judgment, is poor in regard to definite moral situations, it will have been worth while.

Referring back to Table I, page 5, we see that all the 30 members of Group D are guilty of sex offenses except two, numbers 10 and 28. But of the remaining 28 subjects, 8 are guilty of other offenses as well—7 of stealing and 1 of general incorrigibility. Number 18 is besides guilty of excessive lying and number 11 had not only told numerous untruths but, among them, had made false accusations against her own father.

In order to determine whether this group differed in judgment from the remaining 20 subjects who were held as sex offenders without other charges, the moral judgment blanks were divided into two groups for comparison of the 8 passages. Three deal with honesty or stealing, namely, Passages II, IV and VIII. In the first of these, 2 of the 3 subjects who felt stealing when

hungry to be justified, are among our smaller group, one being number 19, a girl with a long career back of her, who had served one term of commitment in the reformatory, and who, on being re-arrested just previous to the testing, was found to be a member of a gang of pickpockets for whom the police had long lain in wait. The other, number 30, charged with excessive incorrigibility, showed throughout the tests, as well as in her conversation, distinctly anti-social tendencies. The other six subjects, however, did not indicate lack of knowledge, at least, that stealing is wrong.

Again, in Passage IV, two subjects, numbers 30 and 15, are among those who see no wrong in dishonesty, and one other is the doubtful case.

In Passage VIII, two of the five subjects who have the highest ideals, abstractly at least, are numbers 25 and 19. These, of all eight guilty of theft, are most proficient in this direction, using it as a means of earning a livelihood, for one is a professional pickpocket, the other a shop-lifter.

Number 18, in whom falsifying is so excessive that it is designated as a delinquency, answers in Passage VI that moral quibbling and lying by means of subterfuge is "all right."

Number 30 alone of all the subjects shows consistently throughout the eight passages the same attitude: To steal when hungry is right, to keep money belonging to another is right, to take advantage of another's error is "wise," to lose one's position for not working is wrong, to conceal a lie by quibbling is justified. Aside from the one subject, however, we find the others are either inconsistent in their lives, or offend though their judgment of right and wrong is no more faulty than is that of other members of the delinquent group not guilty of these particular offenses, or indeed no more faulty than those not delinquent so far as is known.

(4) SUPPLEMENTARY TEST IN PHYSICAL ENDURANCE

In the *American Journal of Insanity*, 1911-12, Vol. 68, there appeared an article on "Differentiating Tests for the Defective Delinquent Class" by Guy Fernald. The study as a whole is not comparable to ours for it deals with boys only. However, among the tests used was one designated an "achievement capacity" test, which was intended to determine will power. The subjects were to stand as long as possible with their heels

raised $\frac{1}{2}$ inch from the floor. An electrical device recorded the touching of the floor. While it seems valuable to be able to measure in some way will power as measured by physical endurance, the test is rather inconvenient, since it requires so much time; for after experimentation it was found that the norm for the average is 50 minutes.

In hopes of measuring much the same trait in personality or capacity, a simpler test was desired. In this study it was hoped to determine much the same quality by the following means: The subject was given a pair of iron dumb-bells, each of which weighed two pounds. She was told on a given signal to take one in each hand and extend the arms level with the shoulders, holding the dumb-bells in a horizontal position. Previous to this, the object of the test had been explained; she was to show how much grit she had, and it was explained that the longer she held the dumb-bells the better the record would be. There was no elaborate technique, but as soon as the arms were dropped about five inches or more the time score was taken. Comparing then the record for the 28 girls tested in Group D and the 34 in Group C, we have Table XII.

The two best records in Group D are hardly fair, since both these subjects were trained athletes appearing on the vaudeville stage almost up to the time the test was made. In consequence, their records show the benefit of unusual practice which all other members of the group had not had. Omitting them, we find that but three of the remaining 26 members of Group D reached or exceeded the median record of Group C. However, it is but fair to say that in Group C a number of the subjects were tested in small groups and a record attained by one acted as a stimulus to the others in an effort to excel their fellow-students. On the other hand, in a number of cases in Group D the subject was told the highest record that had been already attained by any member of the group and was urged to try to surpass it, but the ambition to do so seemed in most cases not worth the discomfort of continued holding of the dumb-bells after some slight pain had begun. Forty-six per cent of Group D reached or exceeded the 25 percentile of Group C and 15% of Group D attained a poorer record than any member of Group C. While it might be thought that Group D were at a decided disadvantage owing to poor physical condition and some other factors, yet, on the other hand, we must remember that

TABLE XII

D	C
500	437
408	330
210	314
183	305
145	300
120	300
120	265
110	252
103	225
103	190
93	180
90	180
90	175
90	165
79	150
79	140
78	125
70	115
69	115
68	110
65	110
64	110
63	105
58	100
49	100
32	90
29	90
20	85
	85
<u>n = 28</u>	<u>83</u>
	<u>75</u>
	<u>70</u>
	<u>64</u>
	<u>55</u>
	<u>n = 34</u>

most of the subjects were much more accustomed to performing work in which the muscles of the arms were used than were members of the College Group.

Both from the table of results and the notes of the writer at the conclusion of the various tests, it would seem that the members of Group C were much more willing to endure physical discomfort for the sake of a good record than were the members of Group D. Very frequently girls in the latter group would remark, "Oh, it hurts!" and drop the dumb-bells. They seemed on the whole to have much less will power and physical endurance, at least in matters where there was no necessity for continued discomfort other than mere pride in a deed well accomplished.

PART IV

1. OTHER INVESTIGATIONS

The studies of the question of the relation existing between mental ability and delinquency have been on the whole quite fragmentary. Lombroso was already interested in the question of the female offender as his book of that title indicates. The English translation appeared in 1909. As is well known, however, Lombroso's interest was largely the study of the physical anomalies of the criminal; so that in this study the emphasis is placed on anthropometrical measurements. He discussed "The Brains of Female Criminals," "The Skull of the Female Offender," and "The Facial and Cephalic Anomalies," but made no study of the native or acquired abilities of his subjects. He did devote one chapter to acuteness of sense, but since his main desire was to corroborate his principle, that there is an intimate correlation between bodily conditions and behavior, he scarcely touched on the question in which we are interested.

As a result of his examination, he found that the criminal population as a whole is to be distinguished from the average member of the community by a much higher percentage of physical anomalies, consisting largely of malformations in the skull and brain and face. It is unnecessary to enumerate his findings in detail. Suffice it to say that they have been subjected to much criticism and in the form in which he enunciated them are little held today.

Madame Tarnowsky's studies, which preceded his and which he so often quotes, are similar in character to his own.

Within the last few years a few studies more comparable to our own have been made. There appeared in *The Training School*, January, 1912, an article called "Defective Children in the Juvenile Court," by Mrs. E. Garfield Gifford and Henry H. Goddard. This study was based upon 100 cases of boys and girls chosen at random from children then in the Detention Home in Newark, N. J. They were guilty of various misde-

meanors, largely consisting of stealing, immorality and incorrigibility. The mental status of these children was determined solely by the use of the Binet tests and the results indicated the discrepancies between the chronological and mental ages. The results are shown in detail below.

THE MENTAL STATUS OF 100 CHILDREN IN A
DETENTION HOME

CHRON. YR.	NO. CASES	YEARS RETARDED	AVERAGE MENTAL AGE
10	1	Normal	10
10	1	1	9.1
9½	4	1½	8
11	9	2	9
11½	6	2½	9.2
12½	7	3	9.3
13½	6	3½	10
14½	26	4	10
14	6	4½	9.2
14.9	10	5	9.4
14½	4	5½	9
16½	11	6	10
15½	7	6½	9.2
15½	1	7½	7.4
17	1	8	8.2

From the above tables we find that there were in these 100 children 34% who were less than 4 years retarded. These, the authors conclude, might with proper training be helped to make up their backwardness and be aided in becoming eventually useful citizens. The remaining 66% were 4 years or more behind their chronological age and were, therefore, classified as feeble-minded. Presumably these children were considered hopelessly defective, so much so that they could not be reclaimed. The authors conclude that the younger children may already have been arrested in development, and if it were possible to re-test them several years later they, too, might be so backward as to fall into the hopelessly subnormal group. They conclude that all children in the courts should be studied, mentally classified and treated according to their mental condition rather than according to physical size or chronological age.

A "Study of Delinquent Girls," by Dr. Anne Burnet, of Chicago, was published in *The Institution Quarterly*, June 30, 1912. This is an official organ of the Public Charity Service of Illinois. The study dealt with a group of young women, also inmates of a Detention Home. There were 106 subjects,

the average age being 15 years 8 months, the range of ages, 8 years to 20. Nearly all were sex delinquents. The problems investigated were much more comprehensive than in the former study reported. They dealt with the physical development, the home conditions, the school career and the occupations in which the subjects had been engaged, as well as with the psychological examination. The results indicated that the physical development of most of the girls was very good indeed. Only two could be called distinctly poorly developed and both of these were feeble-minded. Thirteen were unusually large and over-developed. There were many cases of defects of one kind and another, such as enlarged tonsils, thyroids, bad teeth, defective speech, general nervousness and so on. In testing the special senses, sight and hearing, a considerable proportion of defect was discovered.

The home conditions in the majority of the cases were unsatisfactory. Only six of the 106 subjects claimed to have good homes.

As regards the school records, three of the group maintained they had reached high school, fourteen others claimed to have made the eighth grade, while the average attainment was between the fifth and sixth grades.

The results of the psychological tests led to an enumeration of the cases under the following headings:

(a) Considerably above ordinary in ability and information—the latter estimated with reference to age and social advantages.....	2
(b) Ordinary in ability and information—the latter estimated as above.	18
(c) Native ability fair and formal educational advantages fair or good, but very poorly informed.....	1
(d) Native ability fair and formal educational advantages fair or good..	23
(e) Native ability distinctly good, but formal educational advantages poor.....	0
(f) Native ability fair and formal educational advantages poor.....	15
(g) Native ability poor and formal educational advantages poor.....	8
(h) Native ability poor and formal educational advantages good or fair.	12
(i) Dull from recognized physical causes.....	6
(j) Subnormal mentality—above the usual institutional type of feeble-minded.....	9
(k) Feeble-minded (Moron).....	6
(l) Imbecile.....	0
(m) Psychoses.....	5
Doubtful case.....	1
Total	106

Examining this group, one finds that 21 of the group, or about 20%, were mentally dull enough to come below the class

designated as distinctly poor in mental ability. In other words, one-fifth of the whole number were distinctly below par from the standpoint of mental powers, while 15 or 14% were poor enough to be classed as subnormal or feeble minded. Equally as interesting are the results if the emphasis is thrown on the converse side, for nearly three-fourths of this group of delinquent girls proved to be fairly capable and 44, or 41%, are classified as being fair in ability or above.

In *The Psychological Review*, May, 1913, there appeared an article entitled "Report of Experiments at the State Reformatory for Women, Bedford, N. Y.," by Eleanor Rowland. These experiments were conducted during the summer of 1910. The object was to see if it was possible to frame a set of tests which would, on application to a given girl, determine whether she represented the grade of normality necessary to receive benefit from the educational work of the institution or to be safely set free to earn her living after her term was over. Thirty-five girls were used as subjects, the poorest of whom were regarded by the superintendent as subnormal and unfit for freedom. Four tests were used:

- (1) Reaction time.
- (2) Memory.
- (3) Attention.
- (4) Direct and indirect suggestibility.

Nine records in all were obtained for each subject. Then a standard of normality for each test was taken, and every girl who fell below this standard was marked as failing in this test. A girl who failed in six out of nine was regarded as subnormal.

In the first test, that of reaction time, 50 trials were made, the first 10 of which were regarded as practice tests, and the average of the 40 subsequent trials was taken as the final score. The average time which was used as the standard was .14 to .19 of a second. In consequence, those subjects whose average reaction time was .20 of a second or over were regarded as subnormal. Eleven failed to reach this speed.

"There were two memory tests, one auditory and the other visual. Two lists of nonsense syllables were used with three letters in each syllable. One list was read aloud to the observer till she could repeat it, and the other list was exposed at the

same rate (two seconds exposure), one syllable at a time, behind a small window in a screen. A conservative average rate for women for memorizing such syllables is twenty trials for an auditory and thirteen for a visual. The visual series is easier for the average woman who reads easily. Among the women at Bedford, where reading is not an accomplishment, and where the whole experiment was novel, twenty-five trials were taken as a fair standard in both sets of tests. If, after fifteen trials, there were so few syllables memorized that it was obvious that in twenty-five trials the list could not be complete the observer was not fatigued by further effort. Any observer who had not learned the list before the twenty-fifth trial was regarded as subnormal for either auditory or visual memory. When the observer was illiterate, the verbal test was, of course, impossible."

Three different types of tests were used to measure powers of attention.

In the first, which was intended to measure the span of attention, the observer was shown a set of seven cards, $6 \times 2\frac{1}{2}$ inches, upon which were pasted, in all, 86 objects, such as pictures, letters, scraps of colored paper. Each card was exposed for three seconds, after which the observer was asked to tell what she had seen. A record of only 21% or less of the total number shown was regarded as subnormal; 19 failed to reach the required standard.

The second test for attention dealt with the problem of distractibility. The observer was asked to run a small pointer as quickly as possible over an involved maze of lines and the speed was gotten from an average of seven trials. Then a similar maze was provided upon which pictures and other distracting objects had been pasted between the lines, and the average of seven more trials taken in order to determine how much the pictures had distracted the attention. Trials with the filled and unfilled maze alternated in order to avoid undue practice effect influencing either one. A difference in time between the score of the two types of mazes which amounted to 95% or under was regarded as subnormal, as well as a complete failure to traverse the whole maze after a fair amount of practice in less than 150 seconds. Fourteen of the subjects failed to pass this test.

The third attention test required the subject to count the number of *o*'s in a paragraph of fairly fine print. The letter occurred 554 times, and failure to detect as many as 70% of the entire number was regarded as a subnormal result, the final score being based on five trials. Sixteen were unable to reach the standard.

There were likewise three suggestion tests.

In the first, the cards used to determine the attention span were again employed. After all the free report had been made, the observer was asked if she did not remember having seen certain other objects none of which were really present. If 20% or over of the suggestions were accepted the subject was classified as subnormal. Fifteen proved to be so suggestible that they were classed as failures.

Secondly, ten cards were shown, on each of which a pair of equal white circles was pasted but unequal numbers were written on the faces. After each card was shown the subject was asked which of the two circles was the larger. When 70% or more of the judgments stated that circles bearing larger numbers were in reality larger themselves, the subject was considered abnormally suggestible. This was found to be true for 16 girls.

In the third test, the subject was shown one by one a set of 12 lines, the first five of which increased progressively in length by 12 mm, while the later seven lines remained equal in length. The subject was asked to reproduce each line as it was shown her, and if she continued increasing the later equal lines because of the tendency formed in the earlier five, she was considered suggestible. A coefficient of 75% or over was regarded as abnormal, and measured by this standard 19 of the subjects fell into the abnormal group.

Summarizing the results of these nine tests, we find 11 of the 35 subjects, that is, 31%, to be subnormal; that is, they failed six tests out of nine. Three of the subjects passed all nine tests correctly. Later, eight of these tests were given to 35 subjects who were students in Mt. Holyoke and to seven students in Amherst. Comparing the failures here with the failures in the Bedford women, we find the following:

(1) Reaction Test:

Mt. Holyoke.....	5
Bedford.....	11

(2) Memory Test, *Auditory*:

Mt. Holyoke.....	0
Amherst.....	0
Bedford.....	17

Visual:

Mt. Holyoke.....	1
Amherst.....	0
Bedford.....	11

(3) Attention, *Span*:

Mt. Holyoke.....	0
Amherst.....	0
Bedford.....	19

Counting o's:

Mt. Holyoke.....	0
Amherst.....	0
Bedford.....	16

(4) Suggestion, *Direct*:

Mt. Holyoke.....	3
Amherst.....	2
Bedford.....	15

Circle:

..... 9	..... 4	..... 2
..... 36	..... 19	

Line:

Just recently a book on "Commercialized Prostitution in New York" has appeared in which Dr. Catherine Bement Davis, then superintendent of the Bedford Reformatory for Women, contributes a chapter. Discussing the mentality of 647 women, made the basis of the statistical report, we find 20 had been pronounced insane by commissions in lunacy; three others were to be transferred because of insanity, while 107 were regarded as distinctly feeble-minded. Of the 647 women, 116 had been graded by Binet tests. For these the following result was obtained:

MENTAL AGE	NO. OF CASES
5 yrs.	2
6	1
7	6
8	6
9	29
10	44
11	26
12	2

The 44 falling in the group between five and ten years were regarded as undoubtedly feeble-minded, the remainder of the group as possibly so. Sixty-seven other women were classified as undoubtedly feeble-minded on the basis of observation. Fifty-two others were regarded as distinctly border-line cases; of these it was said that they formed the most troublesome group in the institution, for 90% of the disciplinary troubles were attributable

to them. Twenty-six of the 52 were regarded as uneducable. Their general intelligence was particularly poor; they were capable of being taught a certain amount of manual work, whereas the other 26 were able to do school work pretty well but lacked continuity of purpose or were devoid of moral sense. Eleven of the group were regarded as the equivalent of tramps; that is, they were chronic runaways. Combining these groups, we have a total of 193 individuals or 29.8% who are mental defectives.

Insane transferred to asylum.....	20
Insane tendencies.....	3
Feeble-minded (distinctly so).....	107
Border-line: Neurotic.....	26
Weak-willed.....	26
Runaways.....	11
	193

In 1912, Dr. E. V. Grabe undertook a study of 62 prostitutes who were being treated at the City Hospital in Hamburg. This study—reported under the title “Prostitution, Kriminalität und Psychopathie”—consisted of a physical and psychological examination. The latter was based on the replies to the following 28 questions:

1. Name.
2. Place and date of birth.
3. Religion.
4. What other religions are there?
5. How many inhabitants are there in Hamburg?
6. On what river is the city located?
7. How many classes of train service are there?
8. From what is bread made?
9. When and why is Christmas celebrated?
10. How many days are there in a month?
11. How many legs has a grasshopper?
12. What are the colors and cost of different stamps?
13. What is the difference between a river and a pond?
14. Between a basket and a box?
15. What is the opposite of greed?
16. Test of attention.
17. Forming sentence in which three definite words are used.
18. Season of the year.
19. The different directions.
20. Counting.
21. Completion test.
22. Name of head physician of the hospital.
23. Name of the emperor.
24. Occupation of examiner.
25. What is the heavier, a pound of lead or a pound of feathers?
26. How many centimeters in a meter?
27. What is the size of a person?
28. What would you do if you had a great deal of money?

Each subject was tested separately, a control group numbering 30, all of about the same social class and engaged in similar occupations as the other group, was used. The results of the psychological examination are given in a general, descriptive manner only, the author stating that the subject who succeeds is certainly not subnormal; on the other hand, failure on the tests does not necessarily indicate subnormality.

The responses to the various questions are then analyzed in detail; numbers 8, 10, 11, 12, 22 and 24 are omitted as not having been satisfactory for one reason or another and number 28 was not given to the control group. Number 1 was answered correctly in every case, while two of the prostitute group gave incorrect ages, both cases being older women who presumably wished to appear younger. In questions 5, 16 and 23, the results were almost the same for the two groups; the first being answered poorly, the second correctly by all. This test of attention—repeating a three place number three to five minutes after it was first heard—was, of course, extremely easy.

In all other questions, the control group attained a better record than the group of prostitutes. Thus as regards question 9, all the control group answered correctly, whereas 20 of the 60 in the other group failed; again on questions 13 and 14, 27 of the control group were correct as opposed to 33 right on question 13, and 45 right on question 14, in the second group.

As regards question 21, the Ebbinghaus completion test, the method of scoring was not the same for the two groups. Two of the prostitute group and four of the control group answered promptly and correctly. In the control group, where all errors were scored, 65 errors were made, or an average of 2.17 per subject. No exact record of errors was kept in the prostitute group but general comments on their performances were noted. Thus there were some who could not perform the test at all; five did it well; in 43 cases where errors were counted they totaled 107, average 2.5, range 1 to 7 errors. In three cases, the performance was noted as "good"; in 11, as "uneven"; in other cases as "did not succeed," "scarcely one right," etc. Thus the total result in the prostitute group as measured by that of the control group is inferior with great variation among the members.

In the last question, which was given only to the hospital group, the most noticeable feature of the replies was the lack

of the altruistic impulse. Only one subject mentioned giving to the poor; 13 would save for the future, but the majority of the replies were "egotistic"—they would live well, enjoy themselves, buy fine clothes, go in business, etc.

The author says, "In spite of all criticism of the tests, the results are in favor of the control group. The subjective impression obtained was that the more stupid of the control group were at any rate more "decent" (anständig) than some of the prostitutes whose intelligence may have been greater. Among the prostitutes one finds in reality some very intelligent persons and all gradations down to undoubted imbecility." Real idiots were not found.

Then follows a resumé of the family conditions gathered through conversation with the subject, through letters from former teachers and friends. These show eight of the 62 to have been illegitimate children and 17 to have been reared in institutions. The list of occupations of the fathers leads the author to conclude that in most cases the families were not in poverty and not of the very lowest class, nor was it economic need that was a factor in the early delinquency. From all this he believes the effect of environment to have been over-emphasized in many discussions; it is an influence, but one that is effective according to the nature of the individual.

Combining all the data, that of test results as well as information from others, he believes that 22, or one-third, were feeble-minded; six others were acting under the influence of hysteria; one was possibly a case of dementia. There remained, therefore, a number where nothing positive could be found except early unsteadiness, unreliability, moral indifference. Hence, concludes the author, these must be degenerates!

A study of "The Relation Between Occupation and Criminality of Women" was made by Miss Mary Conyngton and published at Washington, 1911; it is one of the reports on the Condition of Woman and Child Wage Earners. It is based on data regarding 3,229 women in reformatories and prisons in Massachusetts, New York, New Jersey, Ohio, Indiana, Illinois. Of these, the age distribution is as follows:

Under 19 years of age.....	16.2%
20—24 years.....	19.1%
25—29 "	15.2%
30—34 "	12.9%
35—39 "	12.9%
40—44 "	9.3%
45—49 "	6.6%
50 plus.....	7.8%

Regarding the literacy of these women, it was found that

79.9% could read and write.

.5% could read only.

17.9% knew the alphabet.

1.7% ignorant even of this.

As for the occupations in which they had engaged,

80.7% had been engaged in household service.

8.9% " " " factories.

2.0% " " " mercantile pursuits.

8.4% " " " no occupation or no legal occupation.

The author then states that the lack of intelligence in the servant group indicates that these women could not do much else and that their criminality is due to poor intellect and loneliness.

A paper read at a convention of physicians in Cologne in 1908 by Christian Mueller is reported in the *Neurologisches Centralblatt* of that year. It is entitled "Die Psyche der Prostituierten," and is a study of registered prostitutes who came to the psychiatric clinic for treatment. The study comprised a physical, neurological and psychological examination, but the latter is reported in only the most general terms. It dealt with "knowledge, memory, comprehension, etc." Emphasis was laid on the early life and family conditions, school corroboration was sought. Acute mental disturbance was scarcely found at all; on the other hand, forms of congenital feeble-mindedness and so-called psycho-neurosis were frequent. Very striking was the large per cent of epilepsy and hysteria—18% to 30%—according as the term epilepsy is widely or narrowly used. 15% were imbeciles and 15% middle grade feeble-minded; 12% were excessively alcoholic and 20% showed a high degree of nervous excitability but no psychic disturbance; 8% were psychopathic.

These results corroborate, on the whole, the findings of Octave Simonot, who studied 2,000 prostitutes in St. Lazare. No statistical account is given in his work, but the descriptive

recital of characteristics shows a large per cent of neuroses and extreme excitability and instability as true in all cases.

Dr. Ulrich Scheven in an article on "Geistes Störung und Verbrechen in Mecklenburg—Schwerin" reports concerning 114 cases, 88 men and 26 women, whom he studied. Of these cases he finds 46 to belong to the feeble-minded class; 33 cases being classified by him as idiots and imbeciles and 13 cases as higher grade feeble-minded. Of these, congenitally poor in mental endowment, the commonest offense was theft, then prostitution, then arson. What per cent of the 46 cases are women, we cannot tell. Dr. Scheven compares the number of criminals among the insane with the per cent of criminals among the whole population and finds the result to be 3.9% among the former as compared with .8% among the latter. (In Germany as a whole, 1.2%.)

Naecke, in his discussion of "Verbrechen und Wahnsinn beim Weibe," states that 15.1% of the criminal women examined were certainly mentally ill and another group of 20.4% probably so; thus at least one-fifth to one-fourth were probably not responsible.

He made a study of 100 cases found in the hospital for the insane, 53 of whom had been transferred there from various institutions of punishment. The remaining 47 were insane patients who had been punished for crime at least once, or more accurately, who had been punished or tried at least once.

Of the 53 cases, 52.8% had been in household service, 20.8% had been engaged in various types of handwork, 15.2% as factory workers; the remainder, one each in various other occupations. The number who had been sex offenders was not known, but the criminal acts were as follows: theft, 27 cases or 51%; arson, 9 cases or 9.4%; murder, or its attempt, 4 cases or 7.5%. Four of the five cases of vagrancy were diagnosed as feeble-minded, one being also epileptic; six of the nine arson cases were regarded as imbecile and two of the four murderers as feeble-minded. The author states it as his opinion that incarceration does not bring psychoses—those disposed, may there develop it—oftener it is already true before entrance. Of the 47 other cases nine, or 19.2%, were considered surely insane and 11 cases, or 23%, probably deranged. The author concludes that mentality is, in many cases of criminality, the latent pre-

disposition and social factors the inciting causes, but that there is no criminal type, no born criminal.

Langreuter classified one-third of the prisoners ill enough to be sent to the hospital as mentally sick, Mendel, three-fourths as being abnormal. Kern, examining 129 cases, said that but 15 were absolutely normal and Guenther said 40% were abnormal.

In a discussion of "Der Sexual Verbrecher," Dr. Erich Wulffen quotes statistics given by several writers. One, Baumgarten, found that according to data covering three years, there were punished for crime 32, 30 and 41 feeble-minded cases, respectively, among a total of 2,400 prostitutes.

But Bonhoffer, studying 190 prostitutes incarcerated in prison at Breslau, found only 60 normal; two-thirds being mentally defective, that is, hysterical, epileptic or feeble-minded.

The data regarding conditions in England are likewise meagre. In an abstract of the report of the Royal Commission on the Care and Control of the Feeble-minded (1909) there appears the following table regarding the children at Renaud Homes, based on 100 boys and 28 girls taken at random:

	Boys	Girls
Above the average.....	2	1
Normal.....	5	0
Eccentric.....	56	11
	— 63	— 12
Backward.....	18	7
Slightly feeble-minded.....	10	5
Feeble-minded.....	9	4
	— 37	— 16
	— 100	— 28

Helen Bemington, Superintendent of York Rescue House, estimates the feeble-minded received there as 30 per cent.

In the *American Institute of Criminal Law and Criminology*, Vol. 2, 1911-1912, George A. Auden, Medical Superintendent, Educational Committee of Birmingham, England, writes on "Feeble-mindedness and Juvenile Crime." There were among juveniles 16 to 21 years of age, in the year ending March, 1909, 263 convictions, and in the year 1910, 554 convictions. The degree of education of these culprits is as follows:

	ILLITERATE	STANDARD						
		I	II	III	IV	V	VI	VII
1909.....	3	26	70	87	59	12	3	3
1910.....	25	99	157	121	104	27	11	10

There has recently appeared a book on "Prostitution in Europe," by Abraham Flexner, in which conditions as found in European countries are reviewed. In quoting the evidence regarding the mentality of women sex offenders, the author cites the same conditions mentioned in the introduction of this study, as qualifying the available data. He says, "The foregoing statistics are obviously, however, not fully representative, derived as they are mainly from the records of hospital, police, prison and rescue homes. Professionals of low grade and failures are perhaps too largely included, the dull drudges who are most likely to fall into the hands of the law; the stupid who most readily give up in despair."

Keeping in mind this caution, he finds Merrick's data (G. P. Merrick, "Work Among Fallen Women") as to the educational opportunities enjoyed by prostitutes to be generally sustained; less than one-tenth of Merrick's cases had had anything beyond the most rudimentary training. "German prostitutes show at most only the compulsory Volkschule education. Of minors apprehended in 1901, 36% of those over 12 years of age had completed the popular elementary school, one-fifth of 1% had advanced further." "Of 21 girls recently admitted into a newly established observation home in Berlin, five were reported as mentally below par. Of Mrs. Booth's 150 cases, 12% were feeble-minded. In the cases of prostitutes committed under the British Inebriate Acts, the per cent naturally runs much higher; in 1909 out of 219 such immoral women only 70 are described as of 'good' mental state; 118 as 'defective,' 23 'very defective,' eight 'insane'—that is, almost 70% were below normal."

Quoting from Dr. Branthwaite, the author writes, "There is almost consistent evidence here of some causative relationship between mental defect and prostitution, but the evidence is by no means overwhelming enough to justify more than a general conclusion that mental defect is one of the many causes for its prevalence."

"155 Berlin cases between 12 and 21 years of age yield equally as striking results; 30% are reported as mentally intact,

23% feeble-minded, 43% psychopathic. 66% are, therefore, abnormal." (Quoted from Helene Stelzner, "Gibt es geborene Prostituierte ?")

As regards the age at which prostitution begins, German authorities hold the dangerous period to be between 12 and 21 years, few entering such careers after 21. Bending, studying the conditions in Stuttgart from 1894-1908, found the first immorality to have occurred before the age of 17 in 55% of the cases; from 16 to 18 years in 70% of the cases, and between 14 and 25 years in 97.3% of the cases. The truth of the statement is readily perceived when Flexner says, "How far these statistics are reliable, representative or significant, it is impossible to say. Expert scientific study of large numbers of women from each of the strata of prostitution, without as well as within prisons, reformatories, hospitals and refuges, is needed in order to clear up the question."

Not only this, but data regarding educational opportunities, literacy and acquired knowledge, are really insufficient. More interesting and valuable still would be studies of native capacity, general intelligence, presence or lack of any real ability. Such study could be found only through experimental investigations.

That such a need is recognized by many is apparent in the discussions of those interested in the question. Thus in a recent journal, Dr. Healy writes:

"If we made a business-like approach to criminalism we should first ascertain who and what proportion among criminals have the innate ability to meet ordinary social conditions without falling by the wayside and who have not. Then proceeding from that line of demarcation all sorts of studies might be made of why those fail who have the innate capacity to succeed."

2. CONCLUSIONS

As a result of these experiments, we may conclude that certain tests serve to define the intellectual status of various groups of individuals, so that they can be compared one with the other. The tests for general intelligence which have been found, in other studies, to throw light on the capacity of different individuals, prove of value when applied to a problem such as the one dealt with in this study. They enable one to form some judgment of the general ability of the members of the groups, and to compare groups as a whole with each other.

If now we attempt to answer our original question, "Are these thirty delinquent girls so lacking in intellectual capacity that they are unable to earn a livelihood in legitimate vocations?" we must answer, in the light of our findings, "No more so than others who are succeeding in doing so."

Compared with the group of college students, we find the delinquents much less capable; compared with members of evening classes as represented by our group, we find the delinquents still the less capable of the two. Undoubtedly the delinquent group, as a whole, is poor in ability, yet it is composed of girls who vary greatly among themselves, for the best in the group is six times as successful as the poorest in the group, averaging the results on the six general intelligence tests. The poorest members of the group are very poor indeed.

But the results attained by Group S show that this lack of capacity, in and of itself, does not explain the fact of delinquency, for Group S, though no more gifted, yet contains only members who are not and have not been delinquent as far as known.

Since Groups D and S, when compared, prove to be quite on a par as far as general intelligence is concerned, we must conclude that the explanation of the delinquent tendencies shown by members of Group D is something other than the intellectual status alone. This does not mean, of course, that the mentality may not be one factor; but, at least, there must be other factors as well which cause these individuals to engage

in careers that lead them into conflict with the law, while others of like mentality experience no such difficulties.

Just what these other factors may be requires much more elaborate study. One does not know what part is played by home conditions, nor what has been the influence and example of parents and associates; one can not tell without special investigation how much or how little the environment has sheltered the individual girl; nor does one know the shocks and temptations to which each has been subjected. Education, companionship, wholesome interests and recreations—all these and many other forces combine to make each person what he is. Perhaps physical factors are involved as well; perhaps, too, the emotional make-up of different individuals varies so that what is temptation for one is not equally so for another.

At any rate, the results of these experiments tend to show that in a study of the causative factors involved in the beginnings of careers such as our delinquent group represents, it is not sufficient to give mental tests alone, essential as these are; nor can one lay all the blame for delinquencies in behavior at the door of poor mental gifts.

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APPENDIX I

DESCRIPTION OF TESTS USED

Test I, "Easy Opposites" Test

IV. a. As quickly as possible give orally a word that means the exact opposite of each word in the list.

a	b
good	stale
outside	hot
quick	dirty
tall	heavy
big	late
loud	first
white	left
light	morning
happy	much
false	near
like	north
rich	open
sick	in
glad	sharp
thin	east
empty	sour
war	something
many	stay
above	push
friend	nowhere

c	d
high	day
up	asleep
wet	absent
new	brother
soft	best
wider	over
wrong	big
yes	backwards
young	buy
brave	come
winter	cheap
weak	broad
forget	dead
wild	land
beginning	country
straight	tall
raise	son
rough	here
love	less
noisy	easy

Test II, "Hard Opposites."

Write as quickly as you can beside each word in the column a word that means the exact opposite of it. Do the best you can with each word rather than leave the space blank.

a	b
vertical	serious
ignorant	grand
rude	clumsy
simple	to win
deceitful	to respect
stingy	frequently
permanent	to lack
over	apart
to degrade	stormy
weary	motion
to spend	forcible
to reveal	to float
genuine	straight
level	to hold
broken	after
wild	unless
part	rough
past	to bless
permit	to take
precise	exciting
d	c
succeed	tender
strict	animated
tardy	proficient
sleepy	impoverish
suspicious	cruel
rigid	generous
suave	haughty
sinful	silly
conservative	insignificant
refined	disastrous
pride	miser
despondent	result
imaginary	hindrance
beautiful	strength
injurious	innocent
diligent	busy
sell	remember
sure	increase
active	preserve
venturesome	belief

Test III, "Memory of Words" Test.

VI, a. Write down all the words in the list that you can remember after hearing them read once.

a	b
picture	knife
silly	window
unless	peacock
lizard	brass
book	weary
pain	rich
island	vine
tin	servant
literature	pinch
axe	wheel
run	hammock
tomato	horn
tired	pitiless
frost	crack
wide	beef
Indian	glue
c	d
mouse	whisper
bank	Columbus
disease	necessary
cheap	laugh
country	dictionary
study	cane
tooth	key
musician	doctor
pie	boat
building	enough
fruit	walking
weapon	rent
spider	earth
mountain	canvas
shallow	carpet
window	steam

Test IV, "Memory of Passages."

Write down all that you can remember of the substance of the passage after hearing it read once.

a

It isn't necessary to read a book in order to be happy with it. On a steamer or in a hammock you simply have to have the book in your lap or close at hand, with the paper-cutter and pencil. It must be the sort of book you like. You open it and read the table of contents. A deep peace fills your soul. Here is this delicious book and the whole day, both yours. You lean back to think of books by these men and by others that you already know and love. Memory brings you one beautiful picture after another.

b

Thirty-two passengers were injured, none of them seriously, by the derailment of the Chattanooga and Washington Limited train on the Southern Railway, thirty miles south of Charlottesville, and just north of Ryan's Siding, Virginia, early today. A broken rail was the cause of the accident.

The entire train, composed of a baggage car, day coach and three sleepers, left the track, the sleepers being almost destroyed by fire. A special train was quickly made up and proceeded to this city with all the passengers of the Limited. The wreck blocked the track for several hours, all trains meanwhile being detained.

c

Langford of the Three Bars, as the title suggests, is a story of the West depicting cowboy life. The scenes are in South Dakota of the time of the "rustlers," who cared for neither the interference of man nor law. The action turns around the Three Bars Ranch, which is run by Paul Langford, "a man—a godlike type with his sunny hair and his great strength," whose object it is to do away with the cattle thieves headed by Jesse Black. He is aided by Gorden, the county attorney, and Jim Munson, a real cowboy.

d

One morning a couple of Springs ago, if any of your readers had chanced this way, they might have seen me coming from the vineyard with two blue-birds, one in each hand. The birds were well and vigorous and entirely unharmed. If questioned I might have explained that I went down into the vineyard and picked the birds up off the ground, where they had the full possession of their wings, and that there are times when it is not difficult for me to do such things. These birds were of the species known as the Least-fly-catcher, or Chebeck Bird.

Test V, "Ebbinghaus Mutilated Text."

(The subject was first shown what was to be done on a sample sheet similar to the ones given below.)

Fill in each blank with the word which will make the best sense. Do the work as well and as quickly as you can. Put only one word in each blank space.

a

Park Hill on the Hudson offers you a solution—the home problem today. No home seeker—investor—afford to ignore its claims. Escape the wear and tear—the city's noise—rush—this open air paradise, just—the city's edge, all respects an ideal home location—yourself and family. —are cottages containing every improvement waiting— you to step—and make yourself comfortable. It not— commands the most beautiful view around New York—is protected for all times— intrusion. Choice lots are now selling on very easy terms.

b

We believe we can prove—you that this investment is— secure—the dividends so sure, that it justifies you—withdrawing money—the Savings Bank,—it is earning 3½% and putting it—our business where it will earn 7%. We are a New England Enterprise, managed—New England men, and we have behind—a record—fourteen years of unbroken success. —you have much or little you cannot—to let slip this opportunity of doubling the—from your savings. Prompt action in this matter will—you well.

c

I asked the slovenly,—cheerful female— answered the bell—the landlady; wondering the while—I should say when I was asked—references. The merriment had not been called forth—anything amusing—my appearance,—my

vanity had feared, _____ by a story which a man sitting _____ the head of the table was just finishing. The only vacant chair _____ the room was beside him, and, rather awkwardly, _____ I felt that they were _____ my measure, I made my _____ toward it. As I _____ down he greeted _____ with a polite bow.

d

If we are _____ well, thoroughly sound, we _____ not be depressed. The perfectly healthy animal _____ no worries. The remedy has already _____ indicated. Regretfully it is _____ simple _____ very few people take the trouble to _____ it. _____ it is clearly and widely recognized that _____ is stupid, that its _____ is simple where _____ is no organic trouble, worry will _____. Worry is simply a _____ of what _____ the sake of a nice large word, is called "neuresthenia," nerve depletion. _____ plenty of recreation, plenty of fresh air, and the _____ man will not worry.

Test VI, Adapted Completion Test or Moral Judgment Test

Mary had gotten a _____ good position. She could earn a good living if _____ worked steadily. She did not _____ working hard and so she _____ her position. Was this what she deserved _____?

William had determined to gain _____ education, no matter _____ great an effort it required. All day he _____ the machine in the factory, but when night came he cheerfully _____ to the nearby night school where he worked hard.

In Holland there _____ a village which is said to be the cleanest _____ the world. The houses inside and outside, the streets, and every thing about the place are kept as _____ as a pin. Women wearing clumsy wooden shoes may be seen _____ the houses and pavements.

Mary knew _____ mother worried if _____ did not come home on time. One evening Mary _____ invited to spend the night with a friend. She said "Mother _____ worry, but I want to go very much." She told her friend she _____ do as she asked. She _____ if she worried her mother.

At last the dinner _____ done, the _____ was cleared, the room swept and the fire lighted. The _____ in the pitcher was tasted and considered perfect, apples and _____ were put upon the table. Mary's mother _____ her not to go with John. One day she _____ out saying she was going to _____ a friend. She really met John. She said to herself, "It really is _____ and so I told _____." That was _____.

Everything _____ beautiful in Spring. The leaves begin to grow _____ the trees, the grass is green then and _____ begin to bloom. The air is nice and warm and the sun _____ nearly every day.

A girl went into a _____ to buy a hat. The felt hats on one counter were _____ \$1.75 and the velvet hats on another counter _____ marked \$2.48. One velvet hat _____ by mistake with the felt hats that cost \$1.75. So she _____ that one. Wasn't she _____?

In the _____ Anna's mother would have supper ready when Anna's father came _____. He would be _____ to be home again and would _____ the children. After supper Anna would help _____ dishes while her father read his paper.

A _____ lived at home. Her mother had a great deal to _____. The daughter saw this. She _____ tried to help her mother; every one who knew her said she was _____.

Now that she _____ older, Hattie thought she should _____ something to aid the church that had so benefited her. She was not content to _____ the service but offered to teach a class each _____ and did so throughout the _____ winter.

Bessie never missed _____ day at school if she could help it. There she liked to _____ and to write, and to play _____ the children at recess. But it was harder to keep _____ all day at school.

Two factory girls, Anna and Rose _____ eating their dinner at one table. A group of men were _____ their dinner at another table. The girls _____ them and talked more _____. They were _____ girls and _____ that sort of thing.

Lucy was quite ill, so _____ that she was unable to go _____ work. Her friend, Jane, knew this and as Lucy had very little money Jane thought she would take her some _____. She did this and Lucy was _____.

I like _____ be out of doors in the country. I enjoy taking _____ walks; I can listen to the birds _____ in the trees, and sometimes I _____ a bird's nest.

A girl was given 35 cents with which to _____ some coffee. She _____ it for 25 cents and took it _____. She told her mother _____ about it and _____ the change. Don't you think she was _____.

If I _____ a purse full of money I'd buy a pair of warm _____, a load of wood, a _____ for mother and a pair of _____ for me; and if there were enough left, I'd give _____ to my little sister.

There _____ many opportunities for improving oneself in a big city. First there are schools, both _____ and night. Then there are libraries from which books can be taken home. There are _____ concerts and many other means of education.

A _____ was very hungry. He passed a _____ with food outside and wanted _____. He _____ no money but he _____ rather than be _____. A girl saw him and thought him _____.

The girl went to church every Sunday _____. On the way she would _____ her friends and they would _____ together. When they reached the Sunday School they would go to the _____ where their class was held.

In the morning Anna _____ the smaller children get ready for school. She _____ their faces, _____ their hair, and saw that they started on _____. She was _____ because she was busy.

Two girls were waiting _____ a street corner for a car. A crowd of men _____ standing near them. The girls knew the men were talking about them and watching them. So the girls began to _____. This showed they _____.

After Henry received this vast _____ of money, he wished to _____ something for those less fortunate than himself. He determined to purchase _____ and distribute it at Christmas _____ the poor.

John _____ several duties to perform on the farm. He _____ the cows to pasture every morning and every _____. He brought them once more safely to the barn. He fed the _____ and carried water from the well _____ the house.

Jane went _____ night to a dance hall. When _____ came into the hall, she saw there was a number of strange men there. She at once became _____ and all evening she tried to _____ them. She must have had a _____ time.

The farmer boy likes to have winter _____ because it freezes the ground so that _____ can't dig in it. Besides the ground is covered _____ snow so that there is no driving the cows to pasture.

Jane was asked which she would _____ have, some money _____ in the bank for her to save or a beautiful pin. Jane was very _____ and so she took the _____.

Susan was desirous of assisting _____ younger sister to gain a _____ living than she herself was earning. She realized this meant _____ education than her own and she was willing to deny herself _____ in order that her sister might be able to take a trade course at the Trade School.

It was a _____ pleasure to observe the affection which the servants felt toward their mistress. They were anxious to _____ her and each desired to _____ something for her.

When their father was well enough to _____ home the children were happy indeed. Each wished to show _____ some way their happiness. The rooms were _____ and cleaned and everything made cheerful as possible.

Mary liked pretty clothes very _____. She _____ a man who offered to give her a new suit if she would go out with him. She was _____ to do this and _____ to go in this way to the theatre.

That was _____. One day Tom _____ a little child crying on the street. He _____ the child the reason for its tears and learned the _____ was lost. He next asked the child its address and immediately took it _____. There is much _____ interesting in the city. There are the _____ stores where many _____ things are sold. There are, too, crowds of people walking on the streets; and one _____ the noise and hurry.

Mary's mother _____ away and Mary _____ to take care of her younger brothers and sisters. Mary liked to _____ the children. This day she _____ their toys and whenever they cried she _____ them. Don't you think she was a _____ girl?

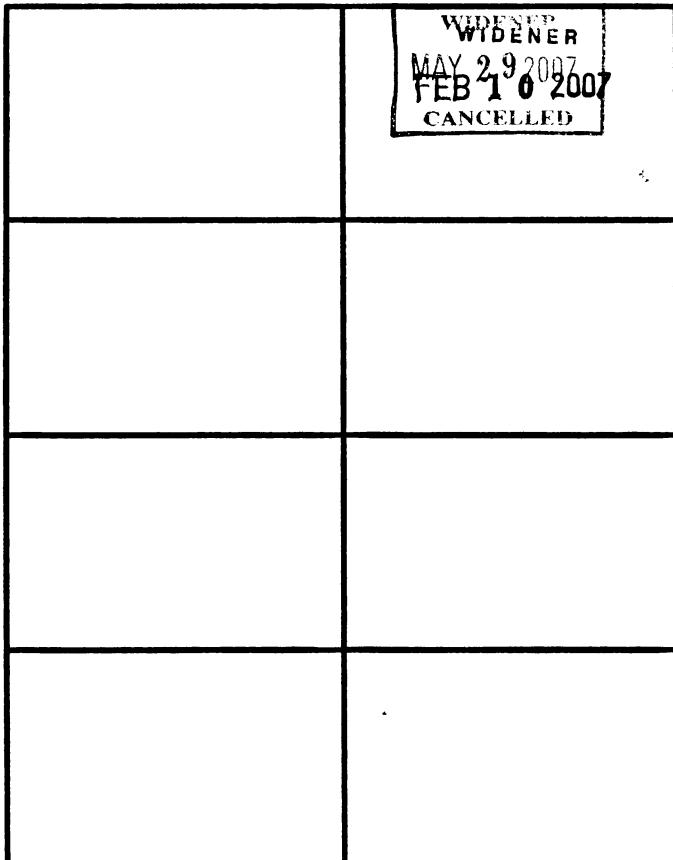
Up rose Mrs. Cratchit dressed _____ in a twice turned gown _____ with ribbons. She _____ the table, assisted by Belinda Cratchit, her daughter, also _____ dressed.

Jane was at a _____ show one night. A man sitting next _____ her, spoke to her several times. When she got up to go home he followed her. Jane _____ and so showed that she _____. The thing _____ delighted Jane most was to be permitted to _____ her teacher. She busily _____ the blackboards, _____ scraps of paper that were on the floor, and _____ on errands of all sorts.

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